

SEQUENCE LISTING

<110> Bhatia, Ajay
 Probst, Peter
 Stromberg, Erika Jean

<120> COMPOUNDS AND METHODS FOR TREATMENT AND DIAGNOSIS
 OF CHLAMYDIAL INFECTION

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<212> DNA

<213> Chlamydia trachomatis

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<212> DNA

<213> Chlamydia trachomatis

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<213> Chlamydia trachomatis

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<211> 861

<212> DNA

<213> *Chlamydia trachomatis*

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<211> 763

<212> DNA

<213> *Chlamydia trachomatis*

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<212> DNA

<213> *Chlamydia trachomatis*

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<210> 10
<211> 843
<212> DNA
<213> Chlamydia trachomatis

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<400> 10
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<210> 11
<211> 1474
<212> DNA
<213> Chlamydia trachomatis

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<400> 11
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<210> 12

<211> 2017

<212> DNA

<213> Chlamydia trachomatis

<400> 12

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<210> 13

<211> 1171

<212> DNA

<213> Chlamydia trachomatis

<400> 13

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<210> 14

<211> 877

<212> DNA

<213> Chlamydia trachomatis

<400> 14

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gaataattaa atctaactga tctaaaaaat tcataaacac ctccatcatt tcttttcttg 840
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<210> 15

<211> 396

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 15

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tttccaatac gctcaatcta aacctaaagt cgaagaatta aacgttctct gtaacgcagc 180
tgagtttact atcaataagc ctaaaggata ttagaggcaa gaattccctc ttgactcat 240
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<210> 16

<211> 516

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 16

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tccacgacgc attagttttt gaaaatctag aagaaaggaa atctgctgaa gtattgttaa 300
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aactgaagat tttagattca ggaactcctg tacaag 516

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<210> 17

<211> 723

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 17

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<210> 18

<211> 1377

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 18

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<210> 19

<211> 1736

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 19

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aagagaagaa	gaagcttcca	ctgcaagagg	cggaatcatt	cttcctgaca	ctgccaaaga	180
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<210> 20

<211> 1135

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 20

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<210> 21

<211> 731

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 21

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<210> 22

<211> 1181

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 22

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<211> 167
 <212> DNA
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<210> 24
 <211> 1265
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 25
 <211> 463
 <212> DNA
 <213> Chlamydia trachomatis serovar E

<400> 25
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<210> 26
 <211> 636
 <212> DNA
 <213> Chlamydia trachomatis serovar E

<400> 26

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<210> 27

<211> 1797

<212> DNA

<213> Chlamydia trachomatis serE

<400> 27

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<210> 28

<211> 1983

<212> DNA

<213> Chlamydia trachomatis serE

<400> 28

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1983

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<210> 29

<211> 1224

<212> DNA

<213> *Chlamydia trachomatis* serE

<400> 29

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<210> 30
 <211> 883
 <212> DNA
 <213> Chlamydia trachomatis serE

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<210> 31
 <211> 393
 <212> DNA
 <213> Chlamydia trachomatis serE

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<210> 32
 <211> 2577
 <212> DNA
 <213> Chlamydia trachomatis serE

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<210> 33

<211> 554

<212> DNA

<213> Chlamydia trachomatis serE

<400> 33

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<210> 34

<211> 1433

<212> DNA

<213> Chlamydia trachomatis serE

<400> 34

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<210> 35

<211> 196

<212> DNA

<213> Chlamydia trachomatis

<400> 35

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gcgtctattt agaagtttgg cacctcgact acgaagattt ccttgaattg agaaagaata 120
caggggatga gcgtcgacgg gctcatgatg tcaatatagc tagctggatt ccagatcttt 180
tcttcaaacy ttaca 196

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<210> 36

<211> 1990

<212> DNA

<213> Chlamydia trachomatis

<400> 36

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<210> 37

<211> 2093

<212> DNA

<213> Chlamydia trachomatis

<400> 37

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<210> 38

<211> 1834

<212> DNA

<213> Chlamydia trachomatis

<400> 38

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<210> 39

<211> 1180

<212> DNA

<213> Chlamydia trachomatis

<400> 39

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<210> 40

<211> 1297

<212> DNA

<213> Chlamydia trachomatis

<400> 40

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<210> 41

<211> 1141

<212> DNA

<213> Chlamydia trachomatis

<400> 41

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tatcatttcc  ctatactgtt  ataggagatc  cgagtgggac  tactgttttt  tctgcaggag  180
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<210> 42

<211> 822

<212> DNA

<213> Chlamydia trachomatis

<400> 42

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agtgggtttt gcttttttct caatctcatt ttagagattt ttttgatttg gacaaaagaa 780
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<210> 43

<211> 1634

<212> DNA

<213> Chlamydia trachomatis

<400> 43

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<210> 44

<211> 1862

<212> DNA

<213> Chlamydia trachomatis

<400> 44

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<210> 45

<211> 1668

<212> DNA

<213> Chlamydia trachomatis

<400> 45

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<210> 46

<211> 2010

<212> DNA

<213> Chlamydia trachomatis

<400> 46

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<210> 47

<211> 2044

<212> DNA

<213> Chlamydia trachomatis

<400> 47

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 <211> 3734
 <212> DNA
 <213> *Chlamydia trachomatis*

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<210> 49

<211> 2937

<212> DNA

<213> Chlamydia pneumoniae

<400> 49

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 <211> 801
 <212> DNA
 <213> Chlamydia pneumoniae

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801

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<210> 51
 <211> 252
 <212> DNA
 <213> Chlamydia pneumoniae

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<210> 52
 <211> 1185
 <212> DNA
 <213> Chlamydia pneumoniae

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<400> 52
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<210> 53

<211> 1431

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 53

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<210> 54

<211> 1041

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 54

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<210> 55

<211> 3135

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 55

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<211> 1386

<212> DNA

<213> Chlamydia pneumoniae

<400> 56

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<213> Chlamydia pneumoniae

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<211> 1086

<212> DNA

<213> *Chlamydia pneumoniae*

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<213> Chlamydia pneumoniae

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<213> Chlamydia pneumoniae

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1983

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<211> 1860

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 62

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aaaactatag	ttttaacttc	tttgtctgag	aacgctaaga	agagtgaaga	gcagacttct	1800
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<210> 63

<211> 1956

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 63

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gcaggtgccg	aagctaagcc	taaagaatct	aagaccgatt	ctgtagagcg	atggagcatc	180
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aatgatgcga	ctcgtgatgt	gataaacaat	gtaagtaccc	ccgctctcac	acgatccggt	1560
cctagagcac	gaacagaagc	tcgaggacca	gaaaaaacag	atcaagccct	cgctaggggtg	1620
atttctggca	atagcagaac	tcttgagat	gtctatagtc	aagtttcggc	actacaatct	1680
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acatcggcag tgacaaagcc tccacagttt ggctatcctt atgtgcaact ttctaataac 1800
tctacacaga agttcatagc taaattagaa agtttggttg ctgaaggatc taggacagca 1860
gctgaaataa aagcactttc ctttgaaacg aactccttgt ttattcagca ggtgctggtc 1920
aatatcggtc ctctatattc tggttatctc caataa 1956

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<210> 64

<211> 264

<212> DNA

<213> Chlamydia pneumoniae

<400> 64

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tacattaaaa aacacaactg tcaggatcaa aaaaataaac gtaatatcct tcccgatgcg 180
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ctttccaaac atattgtaaa ataa 264

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<210> 65

<211> 978

<212> PRT

<213> Chlamydia pneumoniae

<400> 65

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Val Pro Pro Ile Thr Asn Gln Gly Glu Glu Ile Leu Leu Thr Ser Asp
      35      40      45
Phe Val Cys Ser Asn Phe Leu Gly Ala Ser Phe Ser Ser Ser Phe Ile
      50      55      60
Asn Ser Ser Ser Asn Leu Ser Leu Leu Gly Lys Gly Leu Ser Leu Thr
      65      70      75      80
Phe Thr Ser Cys Gln Ala Pro Thr Asn Ser Asn Tyr Ala Leu Leu Ser
      85      90      95
Ala Ala Glu Thr Leu Thr Phe Lys Asn Phe Ser Ser Ile Asn Phe Thr
      100     105     110
Gly Asn Gln Ser Thr Gly Leu Gly Gly Leu Ile Tyr Gly Lys Asp Ile
      115     120     125
Val Phe Gln Ser Ile Lys Asp Leu Ile Phe Thr Thr Asn Arg Val Ala
      130     135     140
Tyr Ser Pro Ala Ser Val Thr Thr Ser Ala Thr Pro Ala Ile Thr Thr
      145     150     155     160
Val Thr Thr Gly Ala Ser Ala Leu Gln Pro Thr Asp Ser Leu Thr Val
      165     170     175
Glu Asn Ile Ser Gln Ser Ile Lys Phe Phe Gly Asn Leu Ala Asn Phe
      180     185     190
Gly Ser Ala Ile Ser Ser Ser Pro Thr Ala Val Val Lys Phe Ile Asn
      195     200     205
Asn Thr Ala Thr Met Ser Phe Ser His Asn Phe Thr Ser Ser Gly Gly
      210     215     220
Gly Val Ile Tyr Gly Gly Ser Ser Leu Leu Phe Glu Asn Asn Ser Gly
      225     230     235     240
Cys Ile Ile Phe Thr Ala Asn Ser Cys Val Asn Ser Leu Lys Gly Val
      245     250     255
Thr Pro Ser Ser Gly Thr Tyr Ala Leu Gly Ser Gly Gly Ala Ile Cys

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			260					265				270			
Ile	Pro	Thr	Gly	Thr	Phe	Glu	Leu	Lys	Asn	Asn	Gln	Gly	Lys	Cys	Thr
		275					280					285			
Phe	Ser	Tyr	Asn	Gly	Thr	Pro	Asn	Asp	Ala	Gly	Ala	Ile	Tyr	Ala	Glu
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Thr	Cys	Asn	Ile	Val	Gly	Asn	Gln	Gly	Ala	Leu	Leu	Leu	Asp	Ser	Asn
305					310					315					320
Thr	Ala	Ala	Arg	Asn	Gly	Gly	Ala	Ile	Cys	Ala	Lys	Val	Leu	Asn	Ile
			325						330					335	
Gln	Gly	Arg	Gly	Pro	Ile	Glu	Phe	Ser	Arg	Asn	Arg	Ala	Glu	Lys	Gly
		340						345					350		
Gly	Ala	Ile	Phe	Ile	Gly	Pro	Ser	Val	Gly	Asp	Pro	Ala	Lys	Gln	Thr
	355					360					365				
Ser	Thr	Leu	Thr	Ile	Leu	Ala	Ser	Glu	Gly	Asp	Ile	Ala	Phe	Gln	Gly
	370				375						380				
Asn	Met	Leu	Asn	Thr	Lys	Pro	Gly	Ile	Arg	Asn	Ala	Ile	Thr	Val	Glu
385					390					395					400
Ala	Gly	Gly	Glu	Ile	Val	Ser	Leu	Ser	Ala	Gln	Gly	Gly	Ser	Arg	Leu
			405						410					415	
Val	Phe	Tyr	Asp	Pro	Ile	Thr	His	Ser	Leu	Pro	Thr	Thr	Ser	Pro	Ser
			420					425					430		
Asn	Lys	Asp	Ile	Thr	Ile	Asn	Ala	Asn	Gly	Ala	Ser	Gly	Ser	Val	Val
	435					440					445				
Phe	Thr	Ser	Lys	Gly	Leu	Ser	Ser	Thr	Glu	Leu	Leu	Leu	Pro	Ala	Asn
	450				455					460					
Thr	Thr	Thr	Ile	Leu	Leu	Gly	Thr	Val	Lys	Ile	Ala	Ser	Gly	Glu	Leu
465				470						475					480
Lys	Ile	Thr	Asp	Asn	Ala	Val	Val	Asn	Val	Leu	Gly	Phe	Ala	Thr	Gln
			485					490						495	
Gly	Ser	Gly	Gln	Leu	Thr	Leu	Gly	Ser	Gly	Gly	Thr	Leu	Gly	Leu	Ala
		500					505					510			
Thr	Pro	Thr	Gly	Ala	Pro	Ala	Ala	Val	Asp	Phe	Thr	Ile	Gly	Lys	Leu
	515					520						525			
Ala	Phe	Asp	Pro	Phe	Ser	Phe	Leu	Lys	Arg	Asp	Phe	Val	Ser	Ala	Ser
	530				535					540					
Val	Asn	Ala	Gly	Thr	Lys	Asn	Val	Thr	Leu	Thr	Gly	Ala	Leu	Val	Leu
545					550					555					560
Asp	Glu	His	Asp	Val	Thr	Asp	Leu	Tyr	Asp	Met	Val	Ser	Leu	Gln	Ser
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Pro	Val	Ala	Ile	Pro	Ile	Ala	Val	Phe	Lys	Gly	Ala	Thr	Val	Thr	Lys
		580					585						590		
Thr	Gly	Phe	Pro	Asp	Gly	Glu	Ile	Ala	Thr	Pro	Ser	His	Tyr	Gly	Tyr
	595				600							605			
Gln	Gly	Lys	Trp	Ser	Tyr	Thr	Trp	Ser	Arg	Pro	Leu	Leu	Ile	Pro	Ala
	610				615					620					
Pro	Asp	Gly	Gly	Phe	Pro	Gly	Gly	Pro	Ser	Pro	Ser	Ala	Asn	Thr	Leu
625					630				635						640
Tyr	Ala	Val	Trp	Asn	Ser	Asp	Thr	Leu	Val	Arg	Ser	Thr	Tyr	Ile	Leu
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Asp	Pro	Glu	Arg	Tyr	Gly	Glu	Ile	Val	Ser	Asn	Ser	Leu	Trp	Ile	Ser
		660					665					670			
Phe	Leu	Gly	Asn	Gln	Ala	Phe	Ser	Asp	Ile	Leu	Gln	Asp	Val	Leu	Leu
	675					680						685			
Ile	Asp	His	Pro	Gly	Leu	Ser	Ile	Thr	Ala	Lys	Ala	Leu	Gly	Ala	Tyr
	690				695						700				
Val	Glu	His	Thr	Pro	Arg	Gln	Gly	His	Glu	Gly	Phe	Ser	Gly	Arg	Tyr
705					710					715					720

Ser Leu Gln Asn Met Glu Phe Pro Gly Glu Ala Ile Arg Asn Thr Ala
 130 135 140
 Thr Leu Leu Glu Pro Leu Gly Gln Phe Phe Ile Val Leu Asn His Pro
 145 150 155 160
 Cys Phe Arg Ile Pro Arg Ala Ser Ser Trp His Tyr Asp Glu Asn Lys
 165 170 175
 Lys Ala Ile Ser Arg His Ile Asp Arg Tyr Leu Ser Pro Met Lys Ile
 180 185 190
 Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser Pro Ser Thr Leu Ser
 195 200 205
 Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu Leu Ser Ser His Gly
 210 215 220
 Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser Ser Lys Thr Ser Thr
 225 230 235 240
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 245 250 255
 Phe Leu Met Ile Ser Cys Ile Lys Ile Lys
 260 265

<210> 67

<211> 83

<212> PRT

<213> Chlamydia pneumoniae

<400> 67

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 20 25 30
 Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys Lys Tyr Ile Lys Val
 35 40 45
 Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala Ile Tyr Phe Val Asp
 50 55 60
 Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp Gly Ile Thr Thr Phe
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 Leu Phe Gly

<210> 68

<211> 394

<212> PRT

<213> Chlamydia pneumoniae

<400> 68

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 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95

Ala	Gln	Met	Asp	Gly	Ala	Ile	Leu	Val	Val	Ser	Ala	Thr	Asp	Gly	Ala		
			100					105					110				
Met	Pro	Gln	Thr	Lys	Glu	His	Ile	Leu	Leu	Ala	Arg	Gln	Val	Gly	Val		
		115					120					125					
Pro	Tyr	Ile	Val	Val	Phe	Leu	Asn	Lys	Val	Asp	Met	Ile	Ser	Gln	Glu		
	130				135					140							
Asp	Ala	Glu	Leu	Ile	Asp	Leu	Val	Glu	Met	Glu	Leu	Ser	Glu	Leu	Leu		
145					150					155					160		
Glu	Glu	Lys	Gly	Tyr	Lys	Gly	Cys	Pro	Ile	Ile	Arg	Gly	Ser	Ala	Leu		
			165					170						175			
Lys	Ala	Leu	Glu	Gly	Asp	Ala	Asn	Tyr	Ile	Glu	Lys	Val	Arg	Glu	Leu		
		180						185					190				
Met	Gln	Ala	Val	Asp	Asp	Asn	Ile	Pro	Thr	Pro	Glu	Arg	Glu	Ile	Asp		
		195				200						205					
Lys	Pro	Phe	Leu	Met	Pro	Ile	Glu	Asp	Val	Phe	Ser	Ile	Ser	Gly	Arg		
	210					215					220						
Gly	Thr	Val	Val	Thr	Gly	Arg	Ile	Glu	Arg	Gly	Ile	Val	Lys	Val	Ser		
225					230					235					240		
Asp	Lys	Val	Gln	Leu	Val	Gly	Leu	Gly	Glu	Thr	Lys	Glu	Thr	Ile	Val		
			245					250						255			
Thr	Gly	Val	Glu	Met	Phe	Arg	Lys	Glu	Leu	Pro	Glu	Gly	Arg	Ala	Gly		
		260						265					270				
Glu	Asn	Val	Gly	Leu	Leu	Leu	Arg	Gly	Ile	Gly	Lys	Asn	Asp	Val	Glu		
	275						280					285					
Arg	Gly	Met	Val	Val	Cys	Gln	Pro	Asn	Ser	Val	Lys	Pro	His	Thr	Lys		
	290					295					300						
Phe	Lys	Ser	Ala	Val	Tyr	Val	Leu	Gln	Lys	Glu	Glu	Gly	Gly	Arg	His		
305					310					315					320		
Lys	Pro	Phe	Phe	Ser	Gly	Tyr	Arg	Pro	Gln	Phe	Phe	Phe	Arg	Thr	Thr		
			325					330					335				
Asp	Val	Thr	Gly	Val	Val	Thr	Leu	Pro	Glu	Gly	Thr	Glu	Met	Val	Met		
		340						345					350				
Pro	Gly	Asp	Asn	Val	Glu	Leu	Asp	Val	Glu	Leu	Ile	Gly	Thr	Val	Ala		
		355					360					365					
Leu	Glu	Glu	Gly	Met	Arg	Phe	Ala	Ile	Arg	Glu	Gly	Gly	Arg	Thr	Ile		
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Gly	Ala	Gly	Thr	Ile	Ser	Lys	Ile	Asn	Ala								
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<210> 69

<211> 476

<212> PRT

<213> Chlamydia pneumoniae

<400> 69

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Gly	Gly	Leu	Gly	Asp	Ala	Val	Ala	Ser	Leu	Ser	Lys	Glu	Leu	Ala	Lys		
		20						25				30					
Gln	Asn	Asp	Val	Glu	Val	Leu	Leu	Pro	His	Tyr	Pro	Leu	Ile	Ser	Lys		
		35				40						45					
Phe	Ser	Ser	Ser	Gln	Val	Leu	Ser	Glu	Arg	Ser	Phe	Tyr	Tyr	Glu	Phe		
	50					55					60						
Leu	Gly	Lys	Gln	Gln	Ala	Ser	Ala	Ile	Ser	Tyr	Ser	Tyr	Glu	Gly	Leu		
65					70					75					80		
Thr	Leu	Thr	Ile	Ile	Thr	Leu	Asp	Ser	Gln	Ile	Glu	Leu	Phe	Ser	Thr		

				85					90					95		
Thr	Ser	Val	Tyr	Ser	Glu	Asn	Asn	Val	Val	Arg	Phe	Ser	Ala	Phe	Ala	
			100					105					110			
Ala	Ala	Ala	Ala	Ala	Tyr	Leu	Gln	Glu	Ala	Asp	Pro	Ala	Asp	Ile	Val	
		115					120					125				
His	Leu	His	Asp	Trp	His	Val	Gly	Leu	Leu	Ala	Gly	Leu	Leu	Lys	Asn	
	130					135					140					
Pro	Leu	Asn	Pro	Val	His	Ser	Lys	Ile	Val	Phe	Thr	Ile	His	Asn	Phe	
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Gly	Tyr	Arg	Gly	Tyr	Cys	Ser	Thr	Gln	Leu	Leu	Ala	Ala	Ser	Gln	Ile	
			165					170						175		
Asp	Asp	Phe	His	Leu	Ser	His	Tyr	Gln	Leu	Phe	Arg	Asp	Pro	Gln	Thr	
		180						185					190			
Ser	Val	Leu	Met	Lys	Gly	Ala	Leu	Tyr	Cys	Ser	Asp	Tyr	Ile	Thr	Thr	
	195						200					205				
Val	Ser	Leu	Thr	Tyr	Val	Gln	Glu	Ile	Ile	Asn	Asp	Tyr	Ser	Asp	Tyr	
	210					215					220					
Glu	Leu	His	Asp	Ala	Ile	Leu	Ala	Arg	Asn	Ser	Val	Phe	Ser	Gly	Ile	
225					230					235					240	
Ile	Asn	Gly	Ile	Asp	Glu	Asp	Val	Trp	Asn	Pro	Lys	Thr	Asp	Pro	Ala	
			245					250						255		
Leu	Ala	Val	Gln	Tyr	Asp	Ala	Ser	Leu	Leu	Ser	Glu	Pro	Asp	Val	Leu	
		260						265					270			
Phe	Thr	Lys	Lys	Glu	Glu	Asn	Arg	Ala	Val	Leu	Tyr	Glu	Lys	Leu	Gly	
	275					280						285				
Ile	Ser	Ser	Asp	Tyr	Phe	Pro	Leu	Ile	Cys	Val	Ile	Ser	Arg	Ile	Val	
	290					295				300						
Glu	Glu	Lys	Gly	Pro	Glu	Phe	Met	Lys	Glu	Ile	Ile	Leu	His	Ala	Met	
305					310					315					320	
Glu	His	Ser	Tyr	Ala	Phe	Ile	Leu	Ile	Gly	Thr	Ser	Gln	Asn	Glu	Val	
			325						330					335		
Leu	Leu	Asn	Glu	Phe	Arg	Asn	Leu	Gln	Asp	Cys	Leu	Ala	Ser	Ser	Pro	
		340						345					350			
Asn	Ile	Arg	Leu	Ile	Leu	Asp	Phe	Asn	Asp	Pro	Leu	Ala	Arg	Leu	Thr	
	355						360					365				
Tyr	Ala	Ala	Ala	Asp	Met	Ile	Cys	Ile	Pro	Ser	His	Arg	Glu	Ala	Cys	
	370					375					380					
Gly	Leu	Thr	Gln	Leu	Ile	Ala	Met	Arg	Tyr	Gly	Thr	Val	Pro	Leu	Val	
385					390					395					400	
Arg	Lys	Thr	Gly	Gly	Leu	Ala	Asp	Thr	Val	Ile	Pro	Gly	Val	Asn	Gly	
			405						410					415		
Phe	Thr	Phe	Phe	Asp	Thr	Asn	Asn	Phe	Asn	Glu	Phe	Arg	Ala	Met	Leu	
		420						425					430			
Ser	Asn	Ala	Val	Thr	Thr	Tyr	Arg	Gln	Glu	Pro	Asp	Val	Trp	Leu	Asn	
	435						440					445				
Leu	Ile	Glu	Ser	Gly	Met	Leu	Arg	Ala	Ser	Gly	Leu	Asp	Ala	Met	Ala	
	450					455					460					
Lys	His	Tyr	Val	Asn	Leu	Tyr	Gln	Ser	Leu	Leu	Ser					
465					470					475						

<210> 70

<211> 346

<212> PRT

<213> Chlamydia pneumoniae

<400> 70

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Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
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Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
      35      40      45
Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp Ile Glu Leu
      50      55      60
Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu
      65      70      75      80
Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
      85      90      95
Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala Arg Gln Tyr
      100      105      110
Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
      115      120      125
Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val Phe Asn Ala
      130      135      140
Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe Gln Met Thr
      145      150      155      160
Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln Ser Ser Glu
      165      170      175
Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
      180      185      190
Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
      195      200      205
Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
      210      215      220
Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
      225      230      235      240
Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu Gln Glu Glu
      245      250      255
Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile Glu Tyr Ala
      260      265      270
Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser Ser Met Phe
      275      280      285
Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
      290      295      300
Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp Met Ser Glu
      305      310      315      320
Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Thr
      325      330      335
Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp
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<210> 71

<211> 1044

<212> PRT

<213> Chlamydia pneumoniae

<400> 71

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      20      25      30
Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro Leu Pro Lys

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		35					40					45				
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Val	Leu	Ala	Lys	Ile	Ser	Glu	Gly	Gln	Val	Val	Thr	Val	Glu	Arg	Ile	
65				70					75					80		
Gln	Asp	Leu	Val	Glu	Ser	Gln	Leu	Tyr	Ile	Ser	Gly	Leu	Gln	Asp	Val	
				85					90					95		
Ala	Arg	Asp	Tyr	Ile	Val	Tyr	Arg	Asp	Gln	Arg	Lys	Ala	Glu	Arg	Gly	
			100					105				110				
Asn	Ser	Ser	Ser	Ile	Ile	Ala	Ile	Ile	Arg	Arg	Asp	Gly	Gly	Ser	Ala	
		115				120					125					
Lys	Phe	Asn	Pro	Met	Lys	Ile	Ser	Ala	Ala	Leu	Glu	Lys	Ala	Phe	Arg	
	130					135				140						
Ala	Thr	Leu	Gln	Ile	Asn	Gly	Met	Thr	Pro	Pro	Ala	Thr	Leu	Ser	Glu	
145				150					155						160	
Ile	Asn	Asp	Leu	Thr	Leu	Arg	Ile	Val	Glu	Asp	Val	Leu	Ser	Leu	His	
				165					170					175		
Gly	Glu	Glu	Ala	Ile	Asn	Leu	Glu	Glu	Ile	Gln	Asp	Ile	Val	Glu	Lys	
			180					185				190				
Gln	Leu	Met	Val	Ala	Gly	Tyr	Tyr	Asp	Val	Ala	Lys	Asn	Tyr	Ile	Leu	
		195				200					205					
Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Ala	Arg	Ala	Asn	Lys	Asp	Gln	Asp	Gly	
		210			215						220					
Gln	Glu	Glu	Phe	Val	Pro	Gln	Glu	Glu	Thr	Tyr	Val	Val	Gln	Lys	Glu	
225				230					235						240	
Asp	Gly	Thr	Thr	Tyr	Leu	Leu	Arg	Lys	Thr	Asp	Leu	Glu	Lys	Arg	Phe	
				245					250					255		
Ser	Trp	Ala	Cys	Lys	Arg	Phe	Pro	Lys	Thr	Thr	Asp	Ser	Gln	Leu	Leu	
		260						265				270				
Ala	Asp	Met	Ala	Phe	Met	Asn	Leu	Tyr	Ser	Gly	Ile	Lys	Glu	Asp	Glu	
		275				280						285				
Val	Thr	Thr	Ala	Cys	Ile	Met	Ala	Ala	Arg	Ala	Asn	Ile	Glu	Arg	Glu	
	290				295						300					
Pro	Asp	Tyr	Ala	Phe	Ile	Ala	Ala	Glu	Leu	Leu	Thr	Ser	Ser	Leu	Tyr	
305				310					315						320	
Glu	Glu	Thr	Leu	Gly	Cys	Ser	Ser	Gln	Asp	Pro	Asn	Leu	Ser	Glu	Ile	
				325					330					335		
His	Lys	Lys	His	Phe	Lys	Glu	Tyr	Ile	Leu	Asn	Gly	Glu	Glu	Tyr	Arg	
			340					345				350				
Leu	Asn	Pro	Gln	Leu	Lys	Asp	Tyr	Asp	Leu	Asp	Ala	Leu	Ser	Glu	Val	
		355				360						365				
Leu	Asp	Leu	Ser	Arg	Asp	Gln	Gln	Phe	Ser	Tyr	Met	Gly	Val	Gln	Asn	
		370				375					380					
Leu	Tyr	Asp	Arg	Tyr	Phe	Asn	Leu	His	Glu	Gly	Arg	Arg	Leu	Glu	Thr	
385				390					3							

Ala	Val	Ile	Lys	Gly	Thr	Asn	Gly	Lys	Ser	Gln	Gly	Val	Ile	Pro	Phe
			500					505					510		
Ile	Lys	Val	Ala	Asn	Asp	Thr	Ala	Ile	Ala	Val	Asn	Gln	Gly	Gly	Lys
		515					520					525			
Arg	Lys	Gly	Ala	Met	Cys	Val	Tyr	Leu	Glu	Asn	Trp	His	Leu	Asp	Tyr
	530				535					540					
Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg
545					550					555					560
Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys
			565					570						575	
Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val
			580					585					590		
Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	Leu	Tyr	Glu
	595						600					605			
Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	Tyr	Lys	Lys
610						615					620				
Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	Leu	Tyr	Glu
625					630					635					640
Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser
				645					650					655	
Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu
			660					665					670		
Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly
	675						680					685			
Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	Asp	Glu	Glu
	690					695					700				
Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	Asp	Asn	Val
705					710					715					720
Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	Ala	Asn	Leu
				725					730					735	
Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	Asp	Val	Leu
			740					745					750		
Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	Glu	Phe	Ser
	755						760					765			
Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	Ala	Ser	Ser
	770					775				780					
Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	Gly	Ser	Lys
785					790					795					800
Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	Leu	Lys	Glu
			805						810					815	
Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	Lys	Lys	Asp
			820					825					830		
Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	Arg	Asn	Ser
	835						840					845			
Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly
	850					855					860				
Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	Val	Lys	Ser
865					870					875					880
Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	Ile	Lys	Lys
			885						890					895	
Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	Asp	Leu	Lys
			900					905					910		
Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	Asn	His	Leu
	915						920					925			
Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	Trp	Ile	Ile
	930					935					940				
Glu	Cys	Thr	Ser	Arg	Arg	Gln	Lys	Trp	Ile	Asp	Met	Gly	Val	Ser	Leu

945		950		955		960
Asn Leu Tyr Leu	Ala Glu Pro Asp Gly Lys	Lys Lys Leu Ser Asn Met Tyr				
	965	970	975			
Leu Thr Ala Trp	Lys Lys Gly Leu Lys Thr Thr Tyr Tyr Leu Arg Ser					
	980	985	990			
Gln Ala Ala Thr	Ser Val Glu Lys Ser Phe Ile Asp Ile Asn Lys Arg					
	995	1000	1005			
Gly Ile Gln Pro	Arg Trp Met Lys Asn Lys Ser Ala Ser Thr Ser Ile					
	1010	1015	1020			
Val Val Glu Arg	Lys Thr Thr Pro Val Cys Ser Met Glu Glu Gly Cys					
	1025	1030	1035			
Glu Ser Cys Gln			1040			

<210> 72
 <211> 461
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 72
Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu Ser Ile Leu
Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn Ser Ser Val
Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys Lys Pro Gln
Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg Ala Arg Lys
Gly Tyr Leu Val Pro Ser Ser Arg Thr Leu Ser Ala Arg Ala Gln Lys
Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys Asn Glu Ile
Ser Ala Asn Ser Thr Pro Arg Ser Val Lys Leu Arg Arg Asn Lys Arg
Ala Glu Gln Lys Ala Ala Lys Gln Gly Phe Ser Ala Phe Ser Asn Leu
Thr Leu Lys Ser Leu Leu Pro Lys Leu Pro Ser Lys Gln Lys Thr Ser
Ile His Glu Arg Glu Lys Ala Thr Ser Arg Phe Val Asn Glu Ser Gln
Leu Ser Ser Ala Arg Lys Arg Tyr Cys Thr Pro Ser Ser Ala Ala Pro
Ser Leu Phe Leu Glu Thr Glu Ile Val Arg Ala Pro Val Glu Arg Thr
Lys Glu Leu Gln Asp Asn Glu Ile His Ile Pro Val Val Gln Val Gln
Thr Asn Pro Lys Glu Gln Asn Thr Lys Thr Thr Lys Gln Leu Ala Ser
Gln Ala Ser Ile Gln Gln Ser Glu Gly Thr Glu Gln Ser Leu Arg Glu
Leu Ala Gln Gly Ala Ser Leu Pro Val Leu Val Arg Ser Asn Pro Glu
Val Ser Val Gln Arg Gln Lys Glu Glu Leu Leu Lys Glu Leu Val Ala
Glu Arg Arg Gln Cys Lys Arg Lys Ser Val Arg Gln Ala Leu Glu Ala

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Arg Ser Leu Thr Lys Lys Val Ala Arg Gly Gly Ser Val Thr Ser Thr
290                295                300
Leu Arg Tyr Asp Pro Glu Lys Ala Ala Glu Ile Lys Ser Arg Arg Asn
305                310                315                320
Cys Lys Val Ser Pro Glu Ala Arg Glu Gln Lys Tyr Ser Ser Cys Lys
                325                330                335
Arg Asp Ala Arg Ala Asn Gly Lys Gln Asp Lys Thr Thr Pro Ser Glu
                340                345                350
Asp Ala Ser Gln Glu Glu Gln Gln Thr Gly Ala Gly Leu Val Arg Lys
                355                360                365
Thr Pro Lys Ser Gln Val Ala Ser Asn Ala Gln Asn Phe Tyr Arg Asn
370                375                380
Ser Lys Asn Thr Asn Ile Asp Ser Tyr Leu Thr Ala Asn Gln Tyr Ser
385                390                395                400
Cys Ser Ser Glu Glu Thr Asp Trp Pro Cys Ser Ser Cys Val Ser Lys
                405                410                415
Arg Arg Thr His Asn Ser Ile Ser Val Cys Thr Met Val Val Thr Val
                420                425                430
Ile Ala Met Ile Val Gly Ala Leu Ile Ile Ala Asn Ala Thr Glu Ser
                435                440                445
Gln Thr Thr Ser Asp Pro Thr Pro Pro Thr Pro Thr Pro
450                455                460

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<210> 73

<211> 576

<212> PRT

<213> Chlamydia pneumoniae

<400> 73

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Met Thr Asp Phe Pro Thr His Phe Lys Gly Pro Lys Leu Asn Pro Ile
                5                10                15
Lys Val Asn Pro Asn Phe Phe Glu Arg Asn Pro Lys Val Ala Arg Val
                20                25                30
Leu Gln Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly
                35                40                45
Ile Val Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile
50                55                60
Leu Gly Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Phe Val Gly Gly
65                70                75                80
Thr Ile Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val
                85                90                95
Asn Gln Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys
                100                105                110
Ala Leu Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His
                115                120                125
Ser Val Val Lys His Leu Lys Lys Leu Asp Leu Asn Leu Ser Lys Thr
130                135                140
Gln Arg Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser
145                150                155                160
Leu Gly Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu
                165                170                175
Lys Met Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr
180                185                190
Gln Glu Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu
195                200                205
Leu Ser Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly

```

210		215		220
Val Phe Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile				
225		230		240
His Thr Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val				
	245		250	255
Met Val Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile				
	260		265	270
Leu Leu Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser				
	275		280	285
Tyr Leu Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp				
	290		295	300
Phe Tyr Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln				
305		310		320
Thr Val Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu				
	325		330	335
Lys Glu Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln				
	340		345	350
Tyr Ile Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg				
	355		360	365
Val Thr Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp				
	370		375	380
Leu Glu Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala				
385		390		400
Ser Pro Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys				
	405		410	415
Glu Phe Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile				
	420		425	430
Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp				
	435		440	445
Met Pro Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr				
	450		455	460
Lys Leu Glu Pro Gly Ser Arg Glu Glu Leu Leu Leu Val Glu Gly Val				
465		470		480
Asn Pro Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln				
	485		490	495
Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr				
	500		505	510
Gly Asn Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu				
	515		520	525
Glu Gly Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr				
	530		535	540
Gln Ser Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile				
545		550		560
Ile Val Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu				
	565		570	575

<210> 74

<211> 361

<212> PRT

<213> Chlamydia pneumoniae

<400> 74

Met Gln Gln Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
Val Val Ala Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly

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Leu Phe Met Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser
    35          40          45
Ser Thr Lys Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp
    50          55          60
Ile Pro Tyr Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val
    65          70          75          80
Phe Ala Arg Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro
    85          90          95
Asp Ile Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
    100          105          110
Val Gln Glu Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg
    115          120          125
Leu Asn Thr Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro
    130          135          140
Gln Lys Asp Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu
    145          150          155          160
His Asn Val Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg
    165          170          175
Ala Ile Ala Ala Gln Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser
    180          185          190
Thr Gly Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu
    195          200          205
Lys Phe Leu Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys
    210          215          220
Glu Ile Val Gly Gln His Gln Gly Ala His Tyr Tyr Thr Ile Gly Gln
    225          230          235          240
Arg Arg Gly Leu Asp Leu Gly Gly Ser Glu Lys Pro Cys Tyr Val Val
    245          250          255
Gly Lys Asn Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp
    260          265          270
His Pro Gln Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp
    275          280          285
Phe Thr Pro Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr
    290          295          300
Arg Ser Pro Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu
    305          310          315          320
Val Lys Val Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln
    325          330          335
Thr Ile Ala Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile
    340          345          350
Asp Val Pro Met Ile Pro Ser Glu Gly
    355          360

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<210> 75

<211> 1609

<212> PRT

<213> Chlamydia pneumoniae

<400> 75

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Met Val Ala Lys Lys Thr Val Arg Ser Tyr Arg Ser Ser Phe Ser His
    5          10          15
Ser Val Ile Val Ala Ile Leu Ser Ala Gly Ile Ala Phe Glu Ala His
    20          25          30
Ser Leu His Ser Ser Glu Leu Asp Leu Gly Val Phe Asn Lys Gln Phe
    35          40          45
Glu Glu His Ser Ala His Val Glu Glu Ala Gln Thr Ser Val Leu Lys

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50	55	60
Gly Ser Asp Pro Val Asn Pro Ser Gln Lys Glu Ser Glu Lys Val Leu		
65	70	75
Tyr Thr Gln Val Pro Leu Thr Gln Gly Ser Ser Gly Glu Ser Leu Asp		
85	90	95
Leu Ala Asp Ala Asn Phe Leu Glu His Phe Gln His Leu Phe Glu Glu		
100	105	110
Thr Thr Val Phe Gly Ile Asp Gln Lys Leu Val Trp Ser Asp Leu Asp		
115	120	125
Thr Arg Asn Phe Ser Gln Pro Thr Gln Glu Pro Asp Thr Ser Asn Ala		
130	135	140
Val Ser Glu Lys Ile Ser Ser Asp Thr Lys Glu Asn Arg Lys Asp Leu		
145	150	155
Glu Thr Glu Asp Pro Ser Lys Lys Ser Gly Leu Lys Glu Val Ser Ser		
165	170	175
Asp Leu Pro Lys Ser Pro Glu Thr Ala Val Ala Ala Ile Ser Glu Asp		
180	185	190
Leu Glu Ile Ser Glu Asn Ile Ser Ala Arg Asp Pro Leu Gln Gly Leu		
195	200	205
Ala Phe Phe Tyr Lys Asn Thr Ser Ser Gln Ser Ile Ser Glu Lys Asp		
210	215	220
Ser Ser Phe Gln Gly Ile Ile Phe Ser Gly Ser Gly Ala Asn Ser Gly		
225	230	235
Leu Gly Phe Glu Asn Leu Lys Ala Pro Lys Ser Gly Ala Ala Val Tyr		
245	250	255
Ser Asp Arg Asp Ile Val Phe Glu Asn Leu Val Lys Gly Leu Ser Phe		
260	265	270
Ile Ser Cys Glu Ser Leu Glu Asp Gly Ser Ala Ala Gly Val Asn Ile		
275	280	285
Val Val Thr His Cys Gly Asp Val Thr Leu Thr Asp Cys Ala Thr Gly		
290	295	300
Leu Asp Leu Glu Ala Leu Arg Leu Val Lys Asp Phe Ser Arg Gly Gly		
305	310	315
Ala Val Phe Thr Ala Arg Asn His Glu Val Gln Asn Asn Leu Ala Gly		
325	330	335
Gly Ile Leu Ser Val Val Gly Asn Lys Gly Ala Ile Val Val Glu Lys		
340	345	350
Asn Ser Ala Glu Lys Ser Asn Gly Gly Ala Phe Ala Cys Gly Ser Phe		
355	360	365
Val Tyr Ser Asn Asn Glu Asn Thr Ala Leu Trp Lys Glu Asn Gln Ala		
370	375	380
Leu Ser Gly Gly Ala Ile Ser Ser Ala Ser Asp Ile Asp Ile Gln Gly		
385	390	395
Asn Cys Ser Ala Ile Glu Phe Ser Gly Asn Gln Ser Leu Ile Ala Leu		
405	410	415
Gly Glu His Ile Gly Leu Thr Asp Phe Val Gly Gly Gly Ala Leu Ala		
420	425	430
Ala Gln Gly Thr Leu Thr Leu Arg Asn Asn Ala Val Val Gln Cys Val		
435	440	445
Lys Asn Thr Ser Lys Thr His Gly Gly Ala Ile Leu Ala Gly Thr Val		
450	455	460
Asp Leu Asn Glu Thr Ile Ser Glu Val Ala Phe Lys Gln Asn Thr Ala		
465	470	475
Ala Leu Thr Gly Gly Ala Leu Ser Ala Asn Asp Lys Val Ile Ile Ala		
485	490	495
Asn Asn Phe Gly Glu Ile Leu Phe Glu Gln Asn Glu Val Arg Asn His		
500	505	510

Gly	Gly	Ala	Ile	Tyr	Cys	Gly	Cys	Arg	Ser	Asn	Pro	Lys	Leu	Glu	Gln
		515					520					525			
Lys	Asp	Ser	Gly	Glu	Asn	Ile	Asn	Ile	Ile	Gly	Asn	Ser	Gly	Ala	Ile
		530					535					540			
Thr	Phe	Leu	Lys	Asn	Lys	Ala	Ser	Val	Leu	Glu	Val	Met	Thr	Gln	Ala
		545				550					555				560
Glu	Asp	Tyr	Ala	Gly	Gly	Gly	Ala	Leu	Trp	Gly	His	Asn	Val	Leu	Leu
				565					570					575	
Asp	Ser	Asn	Ser	Gly	Asn	Ile	Gln	Phe	Ile	Gly	Asn	Ile	Gly	Gly	Ser
			580					585					590		
Thr	Phe	Trp	Ile	Gly	Glu	Tyr	Val	Gly	Gly	Gly	Ala	Ile	Leu	Ser	Thr
		595					600					605			
Asp	Arg	Val	Thr	Ile	Ser	Asn	Asn	Ser	Gly	Asp	Val	Val	Phe	Lys	Gly
		610				615					620				
Asn	Lys	Gly	Gln	Cys	Leu	Ala	Gln	Lys	Tyr	Val	Ala	Pro	Gln	Glu	Thr
					630						635				640
Ala	Pro	Val	Glu	Ser	Asp	Ala	Ser	Ser	Thr	Asn	Lys	Asp	Glu	Lys	Ser
				645					650					655	
Leu	Asn	Ala	Cys	Ser	His	Gly	Asp	His	Tyr	Pro	Pro	Lys	Thr	Val	Glu
			660					665					670		
Glu	Glu	Val	Pro	Pro	Ser	Leu	Leu	Glu	Glu	His	Pro	Val	Val	Ser	Ser
		675					680					685			
Thr	Asp	Ile	Arg	Gly	Gly	Gly	Ala	Ile	Leu	Ala	Gln	His	Ile	Phe	Ile
		690				695					700				
Thr	Asp	Asn	Thr	Gly	Asn	Leu	Arg	Phe	Ser	Gly	Asn	Leu	Gly	Gly	Gly
		705			710					715					720
Glu	Glu	Ser	Ser	Thr	Val	Gly	Asp	Leu	Ala	Ile	Val	Gly	Gly	Gly	Ala
				725					730					735	
Leu	Leu	Ser	Thr	Asn	Glu	Val	Asn	Val	Cys	Ser	Asn	Gln	Asn	Val	Val
			740					745					750		
Phe	Ser	Asp	Asn	Val	Thr	Ser	Asn	Gly	Cys	Asp	Ser	Gly	Gly	Ala	Ile
		755					760					765			
Leu	Ala	Lys	Lys	Val	Asp	Ile	Ser	Ala	Asn	His	Ser	Val	Glu	Phe	Val
		770				775					780				
Ser	Asn	Gly	Ser	Gly	Lys	Phe	Gly	Gly	Ala	Val	Cys	Ala	Leu	Asn	Glu
					790					795					800
Ser	Val	Asn	Ile	Thr	Asp	Asn	Gly	Ser	Ala	Val	Ser	Phe	Ser	Lys	Asn
				805					810					815	
Arg	Thr	Arg	Leu	Gly	Gly	Ala	Gly	Val	Ala	Ala	Pro	Gln	Gly	Ser	Val
			820					825						830	
Thr	Ile	Cys	Gly	Asn	Gln	Gly	Asn	Ile	Ala	Phe	Lys	Glu	Asn	Phe	Val
		835					840					845			
Phe	Gly	Ser	Glu	Asn	Gln	Arg	Ser	Gly	Gly	Gly	Ala	Ile	Ile	Ala	Asn
		850				855					860				
Ser	Ser	Val	Asn	Ile	Gln	Asp	Asn	Ala	Gly	Asp	Ile	Leu	Phe	Val	Ser
					870					875					880
Asn	Ser	Thr	Gly	Ser	Tyr	Gly	Gly	Ala	Ile	Phe	Val	Gly	Ser	Leu	Val
				885					890					895	
Ala	Ser	Glu	Gly	Ser	Asn	Pro	Arg	Thr	Leu	Thr	Ile	Thr	Gly	Asn	Ser
			900					905					910		
Gly	Asp	Ile	Leu	Phe	Ala	Lys	Asn	Ser	Thr	Gln	Thr	Ala	Ala	Ser	Leu
		915					920					925			
Ser	Glu	Lys	Asp	Ser	Phe	Gly	Gly	Gly	Ala	Ile	Tyr	Thr	Gln	Asn	Leu
		930				935					940				
Lys	Ile	Val	Lys	Asn	Ala	Gly	Asn	Val	Ser	Phe	Tyr	Gly	Asn	Arg	Ala
				950						955					960
Pro	Ser	Gly	Ala	Gly	Val	Gln	Ile	Ala	Asp	Gly	Gly	Thr	Val	Cys	Leu

				965					970					975			
Glu	Ala	Phe	Gly	Gly	Asp	Ile	Leu	Phe	Glu	Gly	Asn	Ile	Asn	Phe	Asp		
			980					985					990				
Gly	Ser	Phe	Asn	Ala	Ile	His	Leu	Cys	Gly	Asn	Asp	Ser	Lys	Ile	Val		
		995					1000					1005					
Glu	Leu	Ser	Ala	Val	Gln	Asp	Lys	Asn	Ile	Ile	Phe	Gln	Asp	Ala	Ile		
	1010					1015					1020						
Thr	Tyr	Glu	Glu	Asn	Thr	Ile	Arg	Gly	Leu	Pro	Asp	Lys	Asp	Val	Ser		
1025					1030						1035					1040	
Pro	Leu	Ser	Ala	Pro	Ser	Leu	Ile	Phe	Asn	Ser	Lys	Pro	Gln	Asp	Asp		
				1045					1050						1055		
Ser	Ala	Gln	His	His	Glu	Gly	Thr	Ile	Arg	Phe	Ser	Arg	Gly	Val	Ser		
			1060					1065						1070			
Lys	Ile	Pro	Gln	Ile	Ala	Ala	Ile	Gln	Glu	Gly	Thr	Leu	Ala	Leu	Ser		
		1075					1080					1085					
Gln	Asn	Ala	Glu	Leu	Trp	Leu	Ala	Gly	Leu	Lys	Gln	Glu	Thr	Gly	Ser		
	1090					1095					1100						
Ser	Ile	Val	Leu	Ser	Ala	Gly	Ser	Ile	Leu	Arg	Ile	Phe	Asp	Ser	Gln		
1105					1110					1115					1120		
Val	Asp	Ser	Ser	Ala	Pro	Leu	Pro	Thr	Glu	Asn	Lys	Glu	Glu	Thr	Leu		
				1125					1130						1135		
Val	Ser	Ala	Gly	Val	Gln	Ile	Asn	Met	Ser	Ser	Pro	Thr	Pro	Asn	Lys		
			1140					1145						1150			
Asp	Lys	Ala	Val	Asp	Thr	Pro	Val	Leu	Ala	Asp	Ile	Ile	Ser	Ile	Thr		
		1155					1160					1165					
Val	Asp	Leu	Ser	Ser	Phe	Val	Pro	Glu	Gln	Asp	Gly	Thr	Leu	Pro	Leu		
	1170					1175					1180						
Pro	Pro	Glu	Ile	Ile	Ile	Pro	Lys	Gly	Thr	Lys	Leu	His	Ser	Asn	Ala		
1185					1190						1195				1200		
Ile	Asp	Leu	Lys	Ile	Ile	Asp	Pro	Thr	Asn	Val	Gly	Tyr	Glu	Asn	His		
				1205					1210					1215			
Ala	Leu	Leu	Ser	Ser	His	Lys	Asp	Ile	Pro	Leu	Ile	Ser	Leu	Lys	Thr		
			1220					1225						1230			
Ala	Glu	Gly	Met	Thr	Gly	Thr	Pro	Thr	Ala	Asp	Ala	Ser	Leu	Ser	Asn		
		1235					1240					1245					
Ile	Lys	Ile	Asp	Val	Ser	Leu	Pro	Ser	Ile	Thr	Pro	Ala	Thr	Tyr	Gly		
	1250					1255					1260						
His	Thr	Gly	Val	Trp	Ser	Glu	Ser	Lys	Met	Glu	Asp	Gly	Arg	Leu	Val		
1265					1270					1275</							

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Ile Asn Asn Asp Leu Thr Thr Asp Tyr Gly Thr Leu Gly Ile Ser Thr
1425          1430          1435          1440
Gly Ser Trp Ile Gly Lys Gly Phe Ile Ala Gly Thr Ser Ile Asp Tyr
          1445          1450          1455
Arg Tyr Ile Val Asn Pro Arg Arg Phe Ile Ser Ala Ile Val Ser Thr
          1460          1465          1470
Val Val Pro Phe Val Glu Ala Glu Tyr Val Arg Ile Asp Leu Pro Glu
          1475          1480          1485
Ile Ser Glu Gln Gly Lys Glu Val Arg Thr Phe Gln Lys Thr Arg Phe
1490          1495          1500
Glu Asn Val Ala Ile Pro Phe Gly Phe Ala Leu Glu His Ala Tyr Ser
1505          1510          1515          1520
Arg Gly Ser Arg Ala Glu Val Asn Ser Val Gln Leu Ala Tyr Val Phe
          1525          1530          1535
Asp Val Tyr Arg Lys Gly Pro Val Ser Leu Ile Thr Leu Lys Asp Ala
          1540          1545          1550
Ala Tyr Ser Trp Lys Ser Tyr Gly Val Asp Ile Pro Cys Lys Ala Trp
          1555          1560          1565
Lys Ala Arg Leu Ser Asn Asn Thr Glu Trp Asn Ser Tyr Leu Ser Thr
          1570          1575          1580
Tyr Leu Ala Phe Asn Tyr Glu Trp Arg Glu Asp Leu Ile Ala Tyr Asp
1585          1590          1595          1600
Phe Asn Gly Gly Ile Arg Ile Ile Phe
          1605

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<210> 76

<211> 196

<212> PRT

<213> Chlamydia pneumoniae

<400> 76

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Met Thr Leu Ser Leu Val Gly Lys Glu Ala Pro Asp Phe Val Ala Gln
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Ala Val Val Asn Gly Glu Thr Cys Thr Val Ser Leu Lys Asp Tyr Leu
          20          25          30
Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val
          35          40          45
Cys Pro Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly Glu Phe His
          50          55          60
Thr Arg Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp Ile Ala Thr
          65          70          75          80
His Gln Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly Ile Glu Gly
          85          90          95
Ile Thr Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile Ser Arg Ser
          100          105          110
Tyr His Val Leu Lys Pro Glu Glu Glu Leu Ser Phe Arg Gly Val Phe
          115          120          125
Leu Ile Asp Lys Gly Gly Ile Arg His Leu Val Val Asn Asp Leu
          130          135          140
Pro Leu Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu Asp Ala Leu
145          150          155          160
Ile Phe Phe Glu Thr Asn Gly Leu Val Cys Pro Ala Asn Trp His Glu
          165          170          175
Gly Glu Arg Ala Met Ala Pro Asn Glu Gly Leu Gln Asn Tyr Phe
          180          185          190
Gly Thr Ile Asp

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195

<210> 77
 <211> 619
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 77
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 Ser Ser Val Ala Gly Phe Ser Lys Asp Leu Thr Lys Asp Asn Ala Tyr
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 Gln Asp Leu Asn Val Ile Glu His Leu Ile Ser Leu Lys Tyr Ala Pro
 35 40 45
 Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp Leu Ser Gln Gln Thr
 50 55 60
 Gln Gln Ala Arg Leu Gln Leu Val Leu Glu Glu Lys Pro Thr Thr Asn
 65 70 75 80
 Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg Ser Leu Asn Asp Tyr
 85 90 95
 His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser Ala Tyr Ile Pro Tyr
 100 105
 Val Leu Lys Leu Ser Glu Asp Gly His Val Phe Val Val Asp Val Gln
 115 120 125
 Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu Ile Leu Glu Val Asp
 130 135 140
 Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu Arg Phe Gly Arg Gly
 145 150 155 160
 Ser Ala Thr Asp Tyr Ser Ala Ala Val Arg Ser Leu Thr Ser Arg Ser
 165 170 175
 Ala Ala Phe Gly Asp Ala Val Pro Ser Gly Ile Ala Met Leu Lys Leu
 180 185 190
 Arg Arg Pro Ser Gly Leu Ile Arg Ser Thr Pro Val Arg Trp Arg Tyr
 195 200 205
 Thr Pro Glu His Ile Gly Asp Phe Ser Leu Val Ala Pro Leu Ile Pro
 210 215 220
 Glu His Lys Pro Gln Leu Pro Thr Gln Ser Cys Val Leu Phe Arg Ser
 225 230 235 240
 Gly Val Asn Ser Gln Ser Ser Ser Ser Leu Phe Ser Ser Tyr Met
 245 250 255
 Val Pro Tyr Phe Trp Glu Glu Leu Arg Val Gln Asn Lys Gln Arg Phe
 260 265 270
 Asp Ser Asn His His Ile Gly Ser Arg Asn Gly Phe Leu Pro Thr Phe
 275 280 285
 Gly Pro Ile Leu Trp Glu Gln Asp Lys Gly Pro Tyr Arg Ser Tyr Ile
 290 295 300
 Phe Lys Ala Lys Asp Ser Gln Gly Asn Pro His Arg Ile Gly Phe Leu
 305 310 315 320
 Arg Ile Ser Ser Tyr Val Trp Thr Asp Leu Glu Gly Leu Glu Glu Asp
 325 330 335
 His Lys Asp Ser Pro Trp Glu Leu Phe Gly Glu Ile Ile Asp His Leu
 340 345 350
 Glu Lys Glu Thr Asp Ala Leu Ile Ile Asp Gln Thr His Asn Pro Gly
 355 360 365
 Gly Ser Val Phe Tyr Leu Tyr Ser Leu Leu Ser Met Leu Thr Asp His
 370 375 380

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Pro Leu Asp Thr Pro Lys His Arg Met Ile Phe Thr Gln Asp Glu Val
385          390          395          400
Ser Ser Ala Leu His Trp Gln Asp Leu Leu Glu Asp Val Phe Thr Asp
          405          410          415
Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met Glu Gly Tyr Cys Met
          420          425          430
Asp Met His Ala Val Ala Ser Leu Gln Asn Phe Ser Gln Ser Val Leu
          435          440          445
Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser Lys Pro Met Pro Leu
          450          455          460
Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys His Gln Tyr Thr Lys
465          470          475          480
Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe Ser Cys Gly Asp Leu
          485          490          495
Ala Pro Ala Ile Leu Lys Asp Asn Gly Arg Ala Thr Leu Ile Gly Lys
          500          505          510
Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln Val Thr Phe Pro Asn
          515          520          525
Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly Ser Leu Ala Val Arg
          530          535          540
Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val Ala Pro His Ile Asp
545          550          555          560
Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser Arg Phe Thr Asp Tyr
          565          570          575
Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser Leu Ser Glu Asn Ala
          580          585          590
Lys Lys Ser Glu Glu Gln Thr Ser Pro Gln Glu Thr Pro Glu Val Ile
          595          600          605
Arg Val Ser Tyr Pro Thr Thr Thr Ser Ala Ser
610          615

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<210> 78

<211> 651

<212> PRT

<213> Chlamydia pneumoniae

<400> 78

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          20          25          30
Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys Pro Lys
          35          40          45
Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala
          50          55          60
Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser
          65          70          75          80
Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr
          85          90          95
Ala Thr Ala Pro Thr Pro Pro Pro Pro Thr Phe Asp Asp Tyr Lys Thr
          100          105          110
Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser Leu Ala
          115          120          125
Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr Asn Ile
          130          135          140
Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala Glu Trp

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145					150					155					160
Glu	Thr	Lys	Asn	Ala	Asp	Ala	Val	Lys	Val	Gly	Ala	Gln	Ile	Thr	Glu
				165					170					175	
Leu	Ala	Lys	Tyr	Ala	Ser	Asp	Asn	Gln	Ala	Ile	Leu	Asp	Ser	Leu	Gly
			180					185					190		
Lys	Leu	Thr	Ser	Phe	Asp	Leu	Leu	Gln	Ala	Ala	Leu	Leu	Gln	Ser	Val
		195					200					205			
Ala	Asn	Asn	Asn	Lys	Ala	Ala	Glu	Leu	Leu	Lys	Glu	Met	Gln	Asp	Asn
	210					215					220				
Pro	Val	Val	Pro	Gly	Lys	Thr	Pro	Ala	Ile	Ala	Gln	Ser	Leu	Val	Asp
225					230					235					240
Gln	Thr	Asp	Ala	Thr	Ala	Thr	Gln	Ile	Glu	Lys	Asp	Gly	Asn	Ala	Ile
			245						250					255	
Arg	Asp	Ala	Tyr	Phe	Ala	Gly	Gln	Asn	Ala	Ser	Gly	Ala	Val	Glu	Asn
			260					265					270		
Ala	Lys	Ser	Asn	Asn	Ser	Ile	Ser	Asn	Ile	Asp	Ser	Ala	Lys	Ala	Ala
		275					280					285			
Ile	Ala	Thr	Ala	Lys	Thr	Gln	Ile	Ala	Glu	Ala	Gln	Lys	Lys	Phe	Pro
	290					295					300				
Asp	Ser	Pro	Ile	Leu	Gln	Glu	Ala	Glu	Gln	Met	Val	Ile	Gln	Ala	Glu
305					310					315					320
Lys	Asp	Leu	Lys	Asn	Ile	Lys	Pro	Ala	Asp	Gly	Ser	Asp	Val	Pro	Asn
				325					330					335	
Pro	Gly	Thr	Thr	Val	Gly	Gly	Ser	Lys	Gln	Gln	Gly	Ser	Ser	Ile	Gly
			340					345					350		
Ser	Ile	Arg	Val	Ser	Met	Leu	Leu	Asp	Asp	Ala	Glu	Asn	Glu	Thr	Ala
		355				360						365			
Ser	Ile	Leu	Met	Ser	Gly	Phe	Arg	Gln	Met	Ile	His	Met	Phe	Asn	Thr
	370					375					380				
Glu	Asn	Pro	Asp	Ser	Gln	Ala	Ala	Gln	Gln	Glu	Leu	Ala	Ala	Gln	Ala
385					390					395					400
Arg	Ala	Ala	Lys	Ala	Ala	Gly	Asp	Asp	Ser	Ala	Ala	Ala	Ala	Leu	Ala
				405					410					415	
Asp	Ala	Gln	Lys	Ala	Leu	Glu	Ala	Ala	Leu	Gly	Lys	Ala	Gly	Gln	Gln
			420					425					430		
Gln	Gly	Ile	Leu	Asn	Ala	Leu	Gly	Gln	Ile	Ala	Ser	Ala	Ala	Val	Val
		435					440					445			
Ser	Ala	Gly	Val	Pro	Pro	Ala	Ala	Ala	Ser	Ser	Ile	Gly	Ser	Ser	Val
	450					455					460				
Lys	Gln	Leu	Tyr	Lys	Thr	Ser	Lys	Ser	Thr	Gly	Ser	Asp	Tyr	Lys	Thr
465					470					475					480
Gln	Ile	Ser	Ala	Gly	Tyr	Asp	Ala	Tyr	Lys	Ser	Ile	Asn	Asp	Ala	Tyr
				485					490					495	
Gly	Arg	Ala	Arg	Asn	Asp	Ala	Thr	Arg	Asp	Val	Ile	Asn	Asn	Val	Ser
			500					505					510		
Thr	Pro	Ala	Leu	Thr	Arg	Ser	Val	Pro	Arg	Ala	Arg	Thr	Glu	Ala	Arg
		515					520					525			
Gly	Pro	Glu	Lys	Thr	Asp	Gln	Ala	Leu	Ala	Arg	Val	Ile	Ser	Gly	Asn
	530					535					540				
Ser	Arg	Thr	Leu	Gly	Asp	Val	Tyr	Ser	Gln	Val	Ser	Ala	Leu	Gln	Ser
545					550					555					560
Val	Met	Gln	Ile	Ile	Gln	Ser	Asn	Pro	Gln	Ala	Asn	Asn	Glu	Glu	Ile
				565					570					575	
Arg	Gln	Lys	Leu	Thr	Ser	Ala	Val	Thr	Lys	Pro	Pro	Gln	Phe	Gly	Tyr
			580					585					590		
Pro	Tyr	Val	Gln	Leu	Ser	Asn	Asp	Ser	Thr	Gln	Lys	Phe	Ile	Ala	Lys
		595					600					605			

Leu Glu Ser Leu Phe Ala Glu Gly Ser Arg Thr Ala Ala Glu Ile Lys
 610 615 620
 Ala Leu Ser Phe Glu Thr Asn Ser Leu Phe Ile Gln Gln Val Leu Val
 625 630 635 640
 Asn Ile Gly Ser Leu Tyr Ser Gly Tyr Leu Gln
 645 650

<210> 79
 <211> 87
 <212> PRT
 <213> *Chlamydia pneumoniae*

<400> 79
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 20 25 30
 Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys Gln
 35 40 45
 Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys
 50 55 60
 Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala
 65 70 75 80
 Leu Ser Lys His Ile Val Lys
 85

<210> 80
 <211> 3048
 <212> DNA
 <213> *Chlamydia trachomatis* serovar D

<400> 80
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 gacgatgttt acttgaatgg agactgcgct tttgtcaatg tctatgcagg ggcagagaa 180
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 aaaggggtcta ttttttctgt agagactagt ttggagatct caggcgtcaa aaaaggggtc 600
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 gctggtagtg ggggtagtgg gtctgtctaca acaccaagtt ttacagttaa aaactgtaaa 720
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 ggactatcga agctgatctt ttatgatcct gtagtacaaa ataattcagc agcgggtgca 1380
 tcgacaccat caccatcttc ttcttctatg cctggtgctg tcacgattaa tcagtccggg 1440


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gaaggagcta ccttaactac tgggaccatt acagccacct ctggacgagt gacttttagga 1620
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tctaagttgg ggattgattt agaatccttt ttaactccta actataagac ggccatactg 1740
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<210> 81

<211> 1038

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 81

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gaacattatt tgaatggctg cgcaaataac tggctcccta cagagatccc catggggaaa 180
gacatcgaat tatggaagtc ggatcgtctt tctgaagatg agcggcgagt cattcttttg 240
aatttagg'tt ttttcagcac cg'cagagagc ttggttggga ataattt'gt tctagcaatt 300
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gcggttcaca cgcacacatt tttgtatatt t'gtgagtcac t'cggattaga cgagaaagaa 420
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gcagcaagct taacttgg 1038

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<210> 82

<211> 3159

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 82

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cgctcgataa cgcacaggt agttaaagaa gttgtgcaaa agattacaga tggacaagt 240
gttactgtag agcgtatcca agatatgggt gaaagccaac tatatgtgaa tggtttgcaa 300
gatgttgctc gcgattatat tgtctatcgc gatgaccgta aagcgcacgc gaaaaaatct 360
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caactaatgg ttgttgggca ttatgctgtt gcaaagaact atattcttta tcgagaagct 660
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gaagctgttg aggtgctcag taaagacggt tctacctata caatgacgca ttcgcagttg 780
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<210> 83

<211> 4593

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 83

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<210> 84

<211> 1422

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 84

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<210> 85
 <211> 1179
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 85
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<210> 86
 <211> 585
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 86
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<210> 87
 <211> 258
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 87
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 tctcaacaca tcattaaa 258

<210> 88

<211> 1182
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 88

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<210> 89
 <211> 246
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 89

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<210> 90
 <211> 1137
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 90

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<211> 1689

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 91

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<210> 92

<211> 1074

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 92

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gaacaattgt ccattccata ttacacagtt tccttttcta aggaatataa agagcgagtg 240
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aatcgagaaa tcaaatttga tttattacag aagaaggtag gtgagctaaa aggtgatttt 360
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gacccaata aagaccaaag ttatttctta tgtggcactc ctaaggatgc tttatccaat 480

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<210> 93

<211> 801

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 93

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<210> 94

<211> 2601

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 94

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<210> 95

<211> 1016

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 95

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Ser Phe Thr Asp Ser Gln Gly Pro Val Leu Gln Asn Tyr Ala Phe Ile
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Ser Ala Gly Glu Thr Leu Thr Leu Lys Asp Phe Ser Ser Leu Met Phe
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Ser Lys Asn Val Ser Cys Gly Glu Lys Gly Met Ile Ser Gly Lys Thr
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Gly Tyr Ser Pro Leu Ser Ile Val Pro Ala Ser Thr Pro Thr Pro Pro
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Thr	Leu	Ser	Ala	Ser	Asp	Gly	Asp	Ile	Val	Phe	Ser	Gly	Asn	Met	Thr
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Ser	Asp	Arg	Pro	Gly	Glu	Arg	Ser	Ala	Ala	Arg	Ile	Leu	Ser	Asp	Gly
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Asp	Pro	Val	Val	Gln	Asn	Asn	Ser	Ala	Ala	Gly	Ala	Ser	Thr	Pro	Ser
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Asn	Gly	Ser	Val	Ile	Phe	Thr	Ala	Glu	Ser	Leu	Thr	Pro	Ser	Glu	Lys
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 675 680 685
 Tyr Arg Leu Asp Pro Gln Arg Lys Gly Glu Leu Val Pro Asn Ser Leu
 690 695 700
 Trp Val Ala Gly Ser Ala Leu Arg Thr Phe Thr Asn Gly Leu Lys Glu
 705 710 715 720
 His Tyr Val Ser Arg Asp Val Gly Phe Val Ala Ser Leu His Ala Leu
 725 730 735
 Gly Asp Tyr Ile Leu Asn Tyr Thr Gln Asp Asp Arg Asp Gly Phe Leu
 740 745 750
 Ala Arg Tyr Gly Gly Phe Gln Ala Thr Ala Ala Ser His Tyr Glu Asn
 755 760 765
 Gly Ser Ile Phe Gly Val Ala Phe Gly Gln Leu Tyr Gly Gln Thr Lys
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 Ser Arg Met Tyr Tyr Ser Lys Asp Ala Gly Asn Met Thr Met Leu Ser
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 Tyr Trp Glu Thr Ala Tyr Gly Tyr Ser Val His Arg Met His Thr Gln
 820 825 830
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 835 840 845
 His Asn Asn Asn Tyr Tyr Ala Phe Val Gly Ala Glu His Asn Phe Leu
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 865 870 875 880
 Gly Phe Met Arg Phe Glu Met Ala Gly Gly Trp Ser Ser Ser Thr Arg
 885 890 895
 Glu Thr Gly Ser Leu Thr Arg Tyr Phe Ala Arg Gly Ser Gly His Asn
 900 905 910
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 915 920 925
 Arg Ser Pro Pro Ser Lys Leu Thr Leu Asn Met Gly Tyr Arg Pro Asp
 930 935 940
 Ile Trp Arg Val Thr Pro His Cys Asn Met Glu Ile Ile Ala Asn Gly
 945 950 955 960
 Val Lys Thr Pro Ile Gln Gly Ser Pro Leu Ala Arg His Ala Phe Phe
 965 970 975
 Leu Glu Val His Asp Thr Leu Tyr Ile His His Phe Gly Arg Ala Tyr
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<210> 96

<211> 346

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 96

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<210> 97

<211> 1053

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 97

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			20					25					30				
Phe	Gln	Ala	Leu	Glu	Ala	Ala	Phe	Arg	Asp	Thr	Arg	Arg	Ile	Asp	Asp		
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His	Met	Pro	Leu	Pro	Glu	Asp	Leu	Glu	Ser	Ser	Ile	Arg	Ser	Ile	Thr		
	50					55					60						

His	Gln	Val	Val	Lys	Glu	Val	Val	Gln	Lys	Ile	Thr	Asp	Gly	Gln	Val
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Val	Thr	Val	Glu	Arg	Ile	Gln	Asp	Met	Val	Glu	Ser	Gln	Leu	Tyr	Val
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His	Ser	Gln	Leu	Leu	Ala	His	Leu	Ala	Arg	Ala	Cys	Ser	Arg	Phe	Pro
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Tyr	Ser	Gly	Ile	Lys	Glu	Ser	Glu	Val	Val	Leu	Ala	Cys	Ile	Met	Ala
	290					295					300				
Ala	Arg	Ala	Asn	Ile	Glu	Lys	Glu	Pro	Asp	Tyr	Ala	Phe	Val	Ala	Ala
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Glu	Leu	Leu	Leu	Asp	Val	Val	Tyr	Lys	Glu	Ala	Leu	Gly	Lys	Ser	Lys
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Tyr	Ala	Glu	Asp	Leu	Glu	Gln	Ala	His	Arg	Asp	His	Phe	Lys	Arg	Tyr
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Ile	Ala	Glu	Gly	Asp	Thr	Tyr	Arg	Leu	Asn	Ala	Glu	Leu	Lys	His	Leu
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Phe	Asp	Leu	Asp	Ala	Leu	Ala	Asp	Ala	Met	Asp	Leu	Ser	Arg	Asp	Leu
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Gln	Phe	Ser	Tyr	Met	Gly	Ile	Gln	Asn	Leu	Tyr	Asp	Arg	Tyr	Phe	Asn
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His	His	Glu	Gly	Cys	Arg	Leu	Glu	Thr	Pro	Gln	Ile	Phe	Trp	Met	Arg
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Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met	Arg	His	Ser	Gln	Leu	Ser	Ser	Cys
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Tyr	Leu	Ser	Thr	Val	Gln	Asp	Asn	Leu	Val	Asn	Ile	Tyr	Lys	Val	Ile
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Ala	Asp	Asn	Ala	Met	Leu	Ser	Lys	Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp
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Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	Arg	Leu	Gln	Gln	Lys	Gly	Thr	Trp
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Lys	Met	Leu	Ser	Met	Leu	Phe	Glu	Thr	Gly	His	Pro	Trp	Met	Thr	Phe
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Ala	Val	Arg	Met	Leu	Asp	Asn	Val	Ile	Asp	Ile	Asn	Phe	Tyr	Pro	Thr
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Ser	Gln	Glu	Ala	Val	Glu	Phe	Ala	Asp	Tyr	Ser	Ser	Glu	Leu	Ile	Ser
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Tyr	Tyr	Ala	Ile	Gln	Ala	Ser	Cys	Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr
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Lys	Glu	His	Gly	Met	Arg	His	Cys	Gln	Leu	Met	Ala	Ile	Ala	Pro	Thr
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Gly Lys Lys Leu Ser Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu
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 Lys Thr Thr Tyr Tyr Leu Arg Ser Ser Ser Ala Thr Thr Val Glu Lys
 995 1000 1005
 Ser Phe Val Asp Ile Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys
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<212> PRT

<213> Chlamydia trachomatis serovar D

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 Val Asp Leu His Ala Gly Gly Gln Ser Val Asn Glu Leu Val Tyr Val
 35 40 45
 Gly Pro Gln Ala Val Leu Leu Asp Gln Ile Arg Asp Leu Phe Val
 50 55 60
 Gly Ser Lys Asp Ser Gln Ala Glu Gly Gln Tyr Arg Leu Ile Val Gly
 65 70 75 80
 Asp Pro Ser Ser Phe Gln Glu Lys Asp Ala Asp Thr Leu Pro Gly Lys
 85 90 95
 Val Glu Gln Ser Thr Leu Phe Ser Val Thr Asn Pro Val Val Phe Gln
 100 105 110
 Gly Val Asp Gln Gln Asp Gln Val Ser Ser Gln Gly Leu Ile Cys Ser
 115 120 125
 Phe Thr Ser Ser Asn Leu Asp Ser Pro Arg Asp Gly Glu Ser Phe Leu
 130 135 140
 Gly Ile Ala Phe Val Gly Asp Ser Ser Lys Ala Gly Ile Thr Leu Thr
 145 150 155 160
 Asp Val Lys Ala Ser Leu Ser Gly Ala Ala Leu Tyr Ser Thr Glu Asp
 165 170 175
 Leu Ile Phe Glu Lys Ile Lys Gly Gly Leu Glu Phe Ala Ser Cys Ser
 180 185 190
 Ser Leu Glu Gln Gly Gly Ala Cys Ala Ala Gln Ser Ile Leu Ile His
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 Asp Cys Gln Gly Leu Gln Val Lys His Cys Thr Thr Ala Val Asn Ala
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 Glu Gly Ser Ser Ala Asn Asp His Leu Gly Phe Gly Gly Gly Ala Phe
 225 230 235 240
 Phe Val Thr Gly Ser Leu Ser Gly Glu Lys Ser Leu Tyr Met Pro Ala
 245 250 255
 Gly Asp Met Val Val Ala Asn Cys Asp Gly Ala Ile Ser Phe Glu Gly
 260 265 270
 Asn Ser Ala Asn Phe Ala Asn Gly Gly Ala Ile Ala Ala Ser Gly Lys
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 Val Leu Phe Val Ala Asn Asp Lys Lys Thr Ser Phe Ile Glu Asn Arg
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 Ala Leu Ser Gly Gly Ala Ile Ala Ala Ser Ser Asp Ile Ala Phe Gln

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Asp	Lys	Gly	Ser	Leu	Gly	Gly	Gly	Ala	Ile	Ser	Ser	Leu	Gly	Thr	Val
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Ser	Gln	Gly	Gly	Ala	Ile	Phe	Gly	Lys	Asn	Cys	Gln	Ile	Ser	Asp	Asn
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Glu	Gly	Pro	Val	Val	Phe	Arg	Asp	Ser	Thr	Ala	Cys	Leu	Gly	Gly	Gly
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Ala	Ile	Ala	Ala	Gln	Glu	Ile	Val	Ser	Ile	Gln	Asn	Asn	Gln	Ala	Gly
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Ile	Ser	Phe	Glu	Gly	Gly	Lys	Ala	Ser	Phe	Gly	Gly	Gly	Ile	Ala	Cys
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Thr	Ser	Asp	Leu	Gly	Gln	Met	Glu	Tyr	Gln	Gly	Gly	Gly	Ala	Leu	Phe
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Gly	Ile	Ser	Phe	Thr	Gly	Asn	Ala	Arg	Ala	Pro	Gln	Ala	Leu	Pro	Thr
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Gln	Glu	Glu	Phe	Pro	Leu	Phe	Ser	Lys	Lys	Glu	Gly	Arg	Pro	Leu	Ser
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Ser	Gly	Tyr	Ser	Gly	Gly	Gly	Ala	Ile	Leu	Gly	Arg	Glu	Val	Ala	Ile
				565					570					575	
Leu	His	Asn	Ala	Ala	Val	Val	Phe	Glu	Gln	Asn	Arg	Leu	Gln	Cys	Ser
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Glu	Glu	Glu	Ala	Thr	Leu	Leu	Gly	Cys	Cys	Gly	Gly	Gly	Ala	Val	His
		595					600					605			
Gly	Met	Asp	Ser	Thr	Ser	Ile	Val	Gly	Asn	Ser	Ser	Val	Arg	Phe	Gly
	610					615					620				
Asn	Asn	Tyr	Ala	Met	Gly	Gln	Gly	Val	Ser	Gly	Gly	Ala	Leu	Leu	Ser
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Lys	Thr	Val	Gln	Leu	Ala	Gly	Asn	Gly	Ser	Val	Asp	Phe	Ser	Arg	Asn
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Ile	Ala	Ser	Leu	Gly	Gly	Gly	Ala	Leu	Gln	Ala	Ser	Glu	Gly	Asn	Cys
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Glu	Leu	Val	Asp	Asn	Gly	Tyr	Val	Leu	Phe	Arg	Asp	Asn	Arg	Gly	Arg
		675					680					685			
Val	Tyr	Gly	Gly	Ala	Ile	Ser	Cys	Leu	Arg	Gly	Asp	Val	Val	Ile	Ser
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Gly	Asn	Lys	Gly	Arg	Val	Glu	Phe	Lys	Asp	Asn	Ile	Ala	Thr	Arg	Leu
705					710					715					720
Tyr	Val	Glu	Glu	Thr	Val	Glu	Lys	Val	Glu	Glu	Val	Glu	Pro	Ala	Pro
				725					730					735	
Glu	Gln	Lys	Asp	Asn	Asn	Glu	Leu	Ser	Phe	Leu	Gly	Arg	Ala	Glu	Gln
			740					745					750		
Ser	Phe	Ile	Thr	Ala	Ala	Asn	Gln	Ala	Leu	Phe	Ala	Ser	Glu	Asp	Gly
		755					760					765			

Asp	Leu	Ser	Pro	Glu	Ser	Ser	Ile	Ser	Ser	Glu	Glu	Leu	Ala	Lys	Arg
770						775				780					
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785					790					795					800
Asp	Asn	Gln	Glu	Ala	Val	Val	Phe	Ser	Asn	Asn	Phe	Ser	Asp	Ile	Tyr
				805					810					815	
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Phe	Ser	Gly	Asn	Ser	Ser	Lys	Arg	Asp	Glu	His	Leu	Pro	His	Thr	Gly
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Asn	Val	Leu	Phe	Tyr	Asn	Asn	Val	Ala	Cys	Ser	Gly	Gly	Ala	Val	Arg
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Ile	Glu	Asp	His	Gly	Asn	Val	Leu	Leu	Glu	Ala	Phe	Gly	Gly	Asp	Ile
			900				905						910		
Val	Phe	Lys	Gly	Asn	Ser	Ser	Phe	Arg	Ala	Gln	Gly	Ser	Asp	Ala	Ile
	915						920					925			
Tyr	Phe	Ala	Gly	Lys	Glu	Ser	His	Ile	Thr	Ala	Leu	Asn	Ala	Thr	Glu
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Gly	His	Ala	Ile	Val	Phe	His	Asp	Ala	Leu	Val	Phe	Glu	Asn	Leu	Glu
945					950					955					960
Glu	Arg	Lys	Ser	Ala	Glu	Val	Leu	Leu	Ile	Asn	Ser	Arg	Glu	Asn	Pro
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Gly	Tyr	Thr	Gly	Ser	Ile	Arg	Phe	Leu	Glu	Ala	Glu	Ser	Lys	Val	Pro
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Gln	Cys	Ile	His	Val	Gln	Gln	Gly	Ser	Leu	Glu	Leu	Leu	Asn	Gly	Ala
	995						1000						1005		
Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp	Ala	Gly	Ala	Lys	Leu	Val
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Leu	Ala	Ala	Gly	Ala	Lys	Leu	Lys	Ile	Leu	Asp	Ser	Gly	Thr	Pro	Val
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Gln	Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala	Glu	Ile	Glu	Ser	Ser
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Ser	Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile	Ala	Lys	Asn	Ala	Gln
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Thr	Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile	Ser	Val	Asp	Leu	Ala
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Ser	Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val	Glu	Ala	Pro	Gln	Val
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Ile	Val	Pro	Gly	Gly	Ser	Tyr	Val	Arg	Ser	Gly	Glu	Leu	Asn	Leu	Glu
1105					1110					1115					1120
Leu	Val	Asn	Thr	Thr	Gly	Thr	Gly	Tyr	Glu	Asn	His	Ala	Leu	Leu	Lys
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Asn	Glu	Ala	Lys	Val	Pro	Leu	Met	Ser	Phe	Val	Ala	Ser	Gly	Asp	Glu
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Ala	Ser	Ala	Glu	Ile	Ser	Asn	Leu	Ser	Val	Ser	Asp	Leu	Gln	Ile	His
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Pro	Thr	Gly	Tyr	Arg	Leu	Asp	Pro	Gln	Lys	Ala	Gly	Ala	Leu	Val	Phe
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Arg	Phe	Ala	His	Asn	Leu	Thr	Ala	Gln	Arg	Met	Glu	Phe	Asp	Tyr	Ser
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Thr	Asn	Val	Trp	Gly	Phe	Ala	Phe	Gly	Gly	Phe	Arg	Thr	Leu	Ser	Ala
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Glu	Asn	Leu	Val	Ala	Ile	Asp	Gly	Tyr	Lys	Gly	Ala	Tyr	Gly	Gly	Ala
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Ser	Ala	Gly	Val	Asp	Ile	Gln	Leu	Met	Glu	Asp	Phe	Val	Leu	Gly	Val
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Asn	Asp	Met	Lys	Thr	Arg	Tyr	Gly	Val	Leu	Gly	Glu	Ser	Ser	Ala	Ser
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Trp	Thr	Ser	Arg	Gly	Val	Leu	Ala	Asp	Ala	Leu	Val	Glu	Tyr	Arg	Ser
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Tyr	Val	Glu	Val	Ser	Tyr	Ala	Ser	Met	Lys	Phe	Pro	Gly	Phe	Thr	Glu
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<211> 474

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 99

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Asn	His	Thr	Thr	Glu	Val	Val	Ile	Pro	Leu	Tyr	Pro	Lys	Leu	Phe	Thr	
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Leu	Pro	Lys	Glu	Gln	Asp	Leu	Cys	Ser	Ile	Gln	Lys	Leu	Ser	Tyr	Phe	
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Phe	Ala	Gly	Glu	Gln	Glu	Ala	Thr	Ala	Phe	Ser	Tyr	Phe	Tyr	Glu	Gly	
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Phe Ser Ala Ala Ala Ala Ser Tyr Ile Gln Lys Glu Gly Ala Asn Ile
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Val His Leu His Asp Trp His Thr Gly Leu Val Ala Gly Leu Leu Lys
      130      135      140
Gln Gln Pro Cys Ser Gln Leu Gln Lys Ile Val Leu Thr Leu His Asn
      145      150      155      160
Phe Gly Tyr Arg Gly Tyr Thr Thr Arg Glu Ile Leu Glu Ala Ser Ser
      165      170      175
Leu Asn Glu Phe Tyr Ile Ser Gln Tyr Gln Leu Phe Arg Asp Pro Gln
      180      185      190
Thr Cys Val Leu Leu Lys Gly Ala Leu Tyr Cys Ser Asp Phe Val Thr
      195      200      205
Thr Val Ser Pro Thr Tyr Ala Lys Glu Ile Leu Glu Asp Tyr Ser Asp
      210      215      220
Tyr Glu Ile His Asp Ala Ile Thr Ala Arg Gln His His Leu Arg Gly
      225      230      235      240
Ile Leu Asn Gly Ile Asp Thr Thr Ile Trp Gly Pro Glu Thr Asp Pro
      245      250      255
Asn Leu Ala Lys Asn Tyr Thr Lys Glu Leu Phe Glu Thr Pro Ser Ile
      260      265      270
Phe Phe Glu Ala Lys Ala Glu Asn Lys Lys Ala Leu Tyr Glu Arg Leu
      275      280      285
Gly Leu Ser Leu Glu His Ser Pro Cys Val Cys Ile Ile Ser Arg Ile
      290      295      300
Ala Glu Gln Lys Gly Pro His Phe Met Lys Gln Ala Ile Leu His Ala
      305      310      315      320
Leu Glu Asn Ala Tyr Thr Leu Ile Ile Ile Gly Thr Cys Tyr Gly Asn
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Gln Leu His Glu Glu Phe Ala Asn Leu Gln Glu Ser Leu Ala Asn Ser
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Pro Asp Val Arg Ile Leu Leu Thr Tyr Ser Asp Val Leu Ala Arg Gln
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Ile Phe Ala Ala Ala Asp Met Ile Cys Ile Pro Ser Met Phe Glu Pro
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Cys Gly Leu Thr Gln Met Ile Gly Met Arg Tyr Gly Thr Val Pro Leu
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Val Arg Ala Thr Gly Gly Leu Ala Asp Thr Val Ala Asn Gly Ile Asn
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Leu Ser Glu Ala Val Thr Thr Tyr Arg Thr Asn His Asp Lys Trp Gln
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<213> Chlamydia trachomatis serovar D

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Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Met Arg Val Gly Tyr
      50      55      60
Tyr Gly Asp Phe Val Phe Asp Arg Val Leu Lys Thr Asp Val Asn Lys
      65      70      75      80
Glu Phe Gln Met Gly Ala Lys Pro Thr Thr Asp Thr Gly Asn Ser Ala
      85      90      95
Ala Pro Ser Thr Leu Thr Ala Arg Glu Asn Pro Ala Tyr Gly Arg His
      100      105      110
Met Gln Asp Ala Glu Met Phe Thr Asn Ala Ala Cys Met Ala Leu Asn
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Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Thr Ser Gly
      130      135      140
Tyr Leu Lys Gly Asn Ser Ala Ser Phe Asn Leu Val Gly Leu Phe Gly
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Asp Asn Glu Asn Gln Lys Thr Val Lys Ala Glu Ser Val Pro Asn Met
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Ser Phe Asp Gln Ser Val Val Glu Leu Tyr Thr Asp Thr Thr Phe Ala
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Trp Ser Val Gly Ala Arg Ala Ala Leu Trp Glu Cys Gly Cys Ala Thr
      195      200      205
Leu Gly Ala Ser Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu
      210      215      220
Leu Asn Val Leu Cys Asn Ala Ala Glu Phe Thr Ile Asn Lys Pro Lys
      225      230      235      240
Gly Tyr Val Gly Lys Glu Phe Pro Leu Asp Leu Thr Ala Gly Thr Asp
      245      250      255
Ala Ala Thr Gly Thr Lys Asp Ala Ser Ile Asp Tyr His Glu Trp Gln
      260      265      270
Ala Ser Leu Ala Leu Ser Tyr Arg Leu Asn Met Phe Thr Pro Tyr Ile
      275      280      285
Gly Val Lys Trp Ser Arg Ala Ser Phe Asp Ala Asp Thr Ile Arg Ile
      290      295      300
Ala Gln Pro Lys Ser Ala Thr Ala Ile Phe Asp Thr Thr Thr Leu Asn
      305      310      315      320
Pro Thr Ile Ala Gly Ala Gly Asp Val Lys Thr Gly Ala Glu Gly Gln
      325      330      335
Leu Gly Asp Thr Met Gln Ile Val Ser Leu Gln Leu Asn Lys Met Lys
      340      345      350
Ser Arg Lys Ser Cys Gly Ile Ala Val Gly Thr Thr Ile Val Asp Ala
      355      360      365
Asp Lys Tyr Ala Val Thr Val Glu Thr Arg Leu Ile Asp Glu Arg Ala
      370      375      380
Ala His Val Asn Ala Gln Phe Arg Phe
      385      390

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<210> 101

<211> 195

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 101

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Met Gly Ser Leu Val Gly Arg Gln Ala Pro Asp Phe Ser Gly Lys Ala
      5      10      15
Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg Gly
      20      25      30
Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys
      35      40      45
Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu Glu
      50      55      60
Arg Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr His
      65      70      75      80
Ser Arg Trp Leu Ala Val Ala Arg Asn Ala Gly Gly Ile Glu Gly Thr
      85      90      95
Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe
      100      105      110
Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu
      115      120      125
Ile Asp Lys Tyr Gly Val Val Arg His Ala Val Ile Asn Asp Leu Pro
      130      135      140
Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu Ile
      145      150      155      160
Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser Gly
      165      170      175
Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe Gln
      180      185      190
Thr Met Asp
      195

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<210> 102

<211> 86

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 102

```

Met Ser Gln Asn Lys Asn Ser Ala Phe Met Gln Pro Val Asn Val Ser
      5      10      15
Ala Asp Leu Ala Ala Ile Val Gly Ala Gly Pro Met Pro Arg Thr Glu
      20      25      30
Ile Ile Lys Lys Met Trp Asp Tyr Ile Lys Lys Asn Gly Leu Gln Asp
      35      40      45
Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val
      50      55      60
Phe Gly Thr Glu Lys Pro Ile Asp Met Phe Gln Met Thr Lys Met Val
      65      70      75      80
Ser Gln His Ile Ile Lys
      85

```

<210> 103

<211> 394

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 103

```

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly

```

				5					10					15			
Thr	Ile	Gly	His	Val	Asp	His	Gly	Lys	Thr	Thr	Leu	Thr	Ala	Ala	Ile		
			20					25					30				
Thr	Arg	Ala	Leu	Ser	Gly	Asp	Gly	Leu	Ala	Asp	Phe	Arg	Asp	Tyr	Ser		
		35					40					45					
Ser	Ile	Asp	Asn	Thr	Pro	Glu	Glu	Lys	Ala	Arg	Gly	Ile	Thr	Ile	Asn		
	50					55					60						
Ala	Ser	His	Val	Glu	Tyr	Glu	Thr	Ala	Asn	Arg	His	Tyr	Ala	His	Val		
	65				70					75					80		
Asp	Cys	Pro	Gly	His	Ala	Asp	Tyr	Val	Lys	Asn	Met	Ile	Thr	Gly	Ala		
				85					90					95			
Ala	Gln	Met	Asp	Gly	Ala	Ile	Leu	Val	Val	Ser	Ala	Thr	Asp	Gly	Ala		
			100					105					110				
Met	Pro	Gln	Thr	Lys	Glu	His	Ile	Leu	Leu	Ala	Arg	Gln	Val	Gly	Val		
	115						120					125					
Pro	Tyr	Ile	Val	Val	Phe	Leu	Asn	Lys	Ile	Asp	Met	Ile	Ser	Glu	Glu		
	130				135						140						
Asp	Ala	Glu	Leu	Val	Asp	Leu	Val	Glu	Met	Glu	Leu	Val	Glu	Leu	Leu		
	145				150				155					160			
Glu	Glu	Lys	Gly	Tyr	Lys	Gly	Cys	Pro	Ile	Ile	Arg	Gly	Ser	Ala	Leu		
			165					170						175			
Lys	Ala	Leu	Glu	Gly	Asp	Ala	Ala	Tyr	Ile	Glu	Lys	Val	Arg	Glu	Leu		
		180						185					190				
Met	Gln	Ala	Val	Asp	Asp	Asn	Ile	Pro	Thr	Pro	Glu	Arg	Glu	Ile	Asp		
	195					200					205						
Lys	Pro	Phe	Leu	Met	Pro	Ile	Glu	Asp	Val	Phe	Ser	Ile	Ser	Gly	Arg		
	210				215					220							
Gly	Thr	Val	Val	Thr	Gly	Arg	Ile	Glu	Arg	Gly	Ile	Val	Lys	Val	Ser		
	225				230				235					240			
Asp	Lys	Val	Gln	Leu	Val	Gly	Leu	Arg	Asp	Thr	Lys	Glu	Thr	Ile	Val		
			245					250						255			
Thr	Gly	Val	Glu	Met	Phe	Arg	Lys	Glu	Leu	Pro	Glu	Gly	Arg	Ala	Gly		
		260					265					270					
Glu	Asn	Val	Gly	Leu	Leu	Leu	Arg	Gly	Ile	Gly	Lys	Asn	Asp	Val	Glu		
	275						280					285					
Arg	Gly	Met	Val	Val	Cys	Leu	Pro	Asn	Ser	Val	Lys	Pro	His	Thr	Gln		
	290				295					300							
Phe	Lys	Cys	Ala	Val	Tyr	Val	Leu	Gln	Lys	Glu	Glu	Gly	Gly	Arg	His		
	305				310				315					320			
Lys	Pro	Phe	Phe	Thr	Gly	Tyr	Arg	Pro	Gln	Phe	Phe	Phe	Arg	Thr	Thr		
			325					330					335				
Asp	Val	Thr	Gly	Val	Val	Thr	Leu	Pro	Glu	Gly	Ile	Glu	Met	Val	Met		
		340					345					350					
Pro	Gly	Asp	Asn	Val	Glu	Phe	Glu	Val	Gln	Leu	Ile	Ser	Pro	Val	Ala		
	355					360					365						
Leu	Glu	Glu	Gly	Met	Arg	Phe	Ala	Ile	Arg	Glu	Gly	Gly	Arg	Thr	Ile		
	370				375						380						
Gly	Ala	Gly	Thr	Ile	Ser	Lys	Ile	Ile	Ala								
	385				390												

<210> 104

<211> 82

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 104

Met Gly Gln Asp His Arg Arg Lys Phe Leu Lys Lys Val Ser Phe Val
 5 10 15
 Lys Lys Gln Ala Ala Phe Ala Gly Asn Phe Ile Glu Glu Ile Lys Lys
 20 25 30
 Ile Glu Trp Val Asn Lys Arg Asp Leu Lys Arg Tyr Val Lys Ile Val
 35 40 45
 Leu Met Asn Ile Phe Gly Phe Gly Phe Ser Ile Tyr Cys Val Asp Leu
 50 55 60
 Ala Leu Arg Lys Ser Leu Ser Leu Phe Gly Lys Val Thr Ser Phe Phe
 65 70 75 80
 Phe Gly

<210> 105

<211> 379

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 105

Met Val Ile Pro Lys Val Asp Leu Gly Glu Ser Ala Val Met Met Gly
 5 10 15
 Tyr Lys Leu Thr Ser Gln Leu Ala Met Leu Ser Ile Leu Leu Thr Phe
 20 25 30
 Thr His Thr Met Gly His Ala Ser Gln Met Ser Gln Thr Leu Pro Thr
 35 40 45
 Ile Ile Glu Ala Gln Ala Glu Glu Ala Leu Gln Ala Asp Arg Gly Val
 50 55 60
 Ala Gly Gln Ala Leu Lys Lys Leu Arg Lys Lys Arg Cys Ala Ser Arg
 65 70 75 80
 Lys Ser Ala Cys Lys Ala Ser Phe Lys Lys Lys Asp Phe Phe Ser Cys
 85 90 95
 Ile Thr Asn Gly Leu Phe Ser Gly Asn His Glu Gln Arg Leu Thr Ala
 100 105 110
 Lys Lys Glu Asn Lys Ala Arg Gly Lys Glu Pro Arg Val Val Val Gln
 115 120 125
 Thr Thr Lys Lys Arg Gln Ile Thr Gln Ser Glu Lys Glu Phe Phe Asp
 130 135 140
 Trp Leu Cys Asn Ser Lys Arg Glu Arg Lys Leu Leu Lys Lys Lys Pro
 145 150 155 160
 Val Asn Thr Ser Leu Ala Lys Ser Glu Glu Leu Ser Pro Lys Glu Ala
 165 170 175
 Ala Ile Ala Ala Ala Arg Ala Ser Leu Ser Pro Glu Glu Lys Arg Gln
 180 185 190
 Leu Ile Arg Glu Trp Leu Ala Glu Glu Lys Thr Ala Arg Lys Ser Gly
 195 200 205
 Arg Ala Ala Cys Ala Val Ser Glu Asn Leu Lys Arg Asp Gly Ser Ile
 210 215 220
 Thr Ser Thr Leu Arg Tyr Asp Ala Glu Lys Ala Leu Thr Thr Arg Val
 225 230 235 240
 Lys Arg Asn Glu Asn Ser Val Asn Ala Arg Ala Arg Gln Arg Ala Ala
 245 250 255
 Leu Gln Lys Ala Lys Lys Ala Lys Thr Glu Lys Pro Glu Ala Asp Glu
 260 265 270
 Lys Ala Ala Glu Ala Val Ala Ala Ala Pro Thr Lys Gln Ala His Lys
 275 280 285
 Glu Pro Glu Asn Tyr Phe Ala Ala Thr Ala Ser Thr Asn Asn Thr Asn

290	295	300
Val Met Ser Tyr Leu Asn Ala His Gln Tyr Arg Cys Asp Ser Ser Glu		
305	310	315
Thr Asp Trp Pro Cys Ser Ser Cys Val Thr Lys Arg Arg Ala Asn Phe		
	325	330
Gly Ile Ser Val Cys Thr Met Val Val Thr Val Ile Ala Met Ile Val		
	340	345
Gly Ala Val Ile Ile Ser Asn Ala Thr Asp Ser Thr Val Ala Gly Ser		
	355	360
Ser Gly Thr Gly Gly Gly Gly Ser Thr Gln Pro		365
370	375	

<210> 106

<211> 563

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 106

Met Val Tyr Phe Arg Ala His Gln Pro Arg His Thr Pro Lys Thr Phe		
	5	10
Pro Leu Glu Val His His Ser Phe Ser Asp Lys His Pro Gln Ile Ala		15
	20	25
Lys Ala Met Arg Ile Thr Gly Ile Ala Leu Ala Ala Leu Ser Leu Leu		30
	35	40
Ala Val Val Ala Cys Val Ile Ala Val Ser Ala Gly Gly Ala Ala Ile		45
	50	55
Pro Leu Ala Val Ile Ser Gly Ile Ala Val Met Ser Gly Leu Leu Ser		60
	65	70
Ala Ala Thr Ile Ile Cys Ser Ala Lys Lys Ala Leu Ala Gln Arg Lys		75
	85	90
Gln Lys Gln Leu Glu Glu Ser Leu Pro Leu Asp Asn Ala Thr Glu His		95
	100	105
Val Ser Tyr Leu Thr Ser Asp Thr Ser Tyr Phe Asn Gln Trp Glu Ser		110
	115	120
Leu Gly Ala Leu Asn Lys Gln Leu Ser Gln Ile Asp Leu Thr Ile Gln		125
	130	135
Ala Pro Glu Lys Lys Leu Leu Lys Glu Val Leu Gly Ser Arg Tyr Asp		140
	145	150
Ser Ile Asn His Ser Ile Glu Glu Ile Ser Asp Arg Phe Thr Lys Met		155
	165	170
Leu Ser Leu Leu Arg Leu Arg Glu His Phe Tyr Arg Gly Glu Glu Arg		175
	180	185
Tyr Ala Pro Tyr Leu Ser Pro Pro Leu Leu Asn Lys Asn Arg Leu Leu		190
	195	200
Thr Gln Ile Thr Ser Asn Met Ile Arg Met Leu Pro Lys Ser Gly Gly		205
	210	215
Val Phe Ser Leu Lys Ala Asn Thr Leu Ser His Ala Ser Arg Thr Leu		220
	225	230
Tyr Thr Val Leu Lys Val Ala Leu Ser Leu Gly Val Leu Ala Gly Val		235
	245	250
Ala Ala Leu Ile Ile Phe Leu Pro Pro Ser Leu Pro Phe Ile Ala Val		255
	260	265
Ile Gly Val Ser Ser Leu Ala Leu Gly Met Ala Ser Phe Leu Met Ile		270
	275	280
Arg Gly Ile Lys Tyr Leu Leu Glu His Ser Pro Leu Asn Arg Lys Gln		285
	290	295
		300


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Leu Ala Lys Asp Ile Gln Lys Thr Ile Gly Pro Asp Val Leu Ala Ser
305          310          315          320
Met Val His Tyr Gln His Gln Leu Leu Ser His Leu His Glu Thr Leu
          325          330          335
Leu Asp Glu Ala Ile Thr Ala Arg Trp Ser Glu Pro Phe Phe Ile Glu
          340          345          350
His Ala Asn Leu Lys Ala Lys Ile Glu Asp Leu Thr Lys Gln Tyr Asp
          355          360          365
Ile Leu Asn Ala Ala Phe Asn Lys Ser Leu Gln Gln Asp Glu Ala Leu
          370          375          380
Arg Ser Gln Leu Glu Lys Arg Ala Tyr Leu Phe Pro Ile Pro Asn Asn
385          390          395          400
Asp Glu Asn Ala Lys Thr Lys Glu Ser Gln Leu Leu Asp Ser Glu Asn
          405          410          415
Asp Ser Asn Ser Glu Phe Gln Glu Ile Asn Lys Gly Leu Glu Ala
          420          425          430
Ala Asn Lys Arg Arg Ala Asp Ala Lys Ser Lys Phe Tyr Thr Glu Asp
          435          440          445
Glu Thr Ser Asp Lys Ile Phe Ser Ile Trp Lys Pro Thr Lys Asn Leu
          450          455          460
Ala Leu Glu Asp Leu Trp Arg Val His Glu Ala Cys Asn Glu Glu Gln
465          470          475          480
Gln Ala Leu Leu Leu Glu Asp Tyr Met Ser Tyr Lys Thr Ser Glu Cys
          485          490          495
Gln Ala Ala Leu Gln Lys Val Ser Gln Glu Leu Lys Ala Ala Gln Lys
          500          505          510
Ser Phe Ala Val Leu Glu Lys His Ala Leu Asp Arg Ser Tyr Glu Ser
          515          520          525
Ser Val Ala Thr Met Asp Leu Ala Arg Ala Asn Gln Glu Thr His Arg
530          535          540
Leu Leu Asn Ile Leu Ser Glu Leu Gln Gln Leu Ala Gln Tyr Leu Leu
545          550          555          560
Asp Asn His

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<210> 107

<211> 358

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 107

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Met Arg Lys Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
          5          10          15
Val Val Ala Tyr Leu Leu Lys Lys Gln Gly Glu Tyr Asn Val Val Gly
          20          25          30
Leu Phe Met Lys Asn Trp Gly Glu Gln Asp Glu Asn Gly Glu Cys Thr
          35          40          45
Ala Thr Lys Asp Phe Arg Asp Val Glu Arg Ile Ala Glu Gln Leu Ser
          50          55          60
Ile Pro Tyr Tyr Thr Val Ser Phe Ser Lys Glu Tyr Lys Glu Arg Val
65          70          75          80
Phe Ser Arg Phe Leu Arg Glu Tyr Ala Asn Gly Tyr Thr Pro Asn Pro
          85          90          95
Asp Val Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
          100          105          110
Val Arg Glu Leu Lys Gly Asp Phe Leu Ala Thr Gly His Tyr Cys Arg

```

		115				120				125					
Gly	Gly	Ala	Asp	Gly	Thr	Gly	Leu	Ser	Arg	Gly	Ile	Asp	Pro	Asn	Lys
	130					135					140				
Asp	Gln	Ser	Tyr	Phe	Leu	Cys	Gly	Thr	Pro	Lys	Asp	Ala	Leu	Ser	Asn
145					150					155					160
Val	Leu	Phe	Pro	Leu	Gly	Gly	Met	Tyr	Lys	Thr	Glu	Val	Arg	Arg	Ile
					165					170					175
Ala	Gln	Glu	Ala	Gly	Leu	Ala	Thr	Ala	Thr	Lys	Lys	Asp	Ser	Thr	Gly
					180					185				190	
Ile	Cys	Phe	Ile	Gly	Lys	Arg	Pro	Phe	Lys	Ser	Phe	Leu	Glu	Gln	Phe
		195					200					205			
Val	Ala	Asp	Ser	Pro	Gly	Asp	Ile	Ile	Asp	Phe	Asp	Thr	Gln	Gln	Val
	210					215					220				
Val	Gly	Arg	His	Glu	Gly	Ala	His	Tyr	Tyr	Thr	Ile	Gly	Gln	Arg	Arg
225					230					235					240
Gly	Leu	Asn	Ile	Gly	Gly	Met	Glu	Lys	Pro	Cys	Tyr	Val	Leu	Ser	Lys
				245					250					255	
Asn	Met	Glu	Lys	Asn	Ile	Val	Tyr	Ile	Val	Arg	Gly	Glu	Asp	His	Pro
			260					265					270		
Leu	Leu	Tyr	Arg	Gln	Glu	Leu	Leu	Ala	Lys	Glu	Leu	Asn	Trp	Phe	Val
		275					280					285			
Pro	Leu	Gln	Glu	Pro	Met	Ile	Cys	Ser	Ala	Lys	Val	Arg	Tyr	Arg	Ser
	290					295					300				
Pro	Asp	Glu	Lys	Cys	Ser	Val	Tyr	Pro	Leu	Glu	Asp	Gly	Thr	Val	Lys
305					310					315					320
Val	Ile	Phe	Asp	Val	Pro	Val	Lys	Ala	Val	Thr	Pro	Gly	Gln	Thr	Val
				325					330					335	
Ala	Phe	Tyr	Gln	Gly	Asp	Ile	Cys	Leu	Gly	Gly	Gly	Val	Ile	Glu	Val
			340					345					350		
Pro	Met	Ile	His	Gln	Leu										
		355													

<210> 108

<211> 267

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 108

Met	Ser	Arg	Lys	Pro	Ala	Ser	Asn	Ser	Ser	Arg	Asn	Thr	Lys	Arg	Ser
				5					10					15	
Ser	Asp	Thr	Ser	Trp	Glu	Val	Ile	Ala	Gln	Asp	Tyr	Asn	Lys	Ala	Val
			20					25					30		
Asp	Arg	Asp	Gly	His	Phe	Tyr	His	Lys	Glu	Val	Ile	Leu	Pro	Asn	Leu
		35					40					45			
Leu	Ser	Lys	Leu	His	Ile	Ser	Arg	Ser	Ser	Ser	Leu	Val	Asp	Val	Gly
	50					55					60				
Cys	Gly	Gln	Gly	Ile	Leu	Glu	Lys	His	Leu	Pro	Lys	His	Leu	Pro	Tyr
65					70				75						80
Leu	Gly	Ile	Asp	Leu	Ser	Pro	Ser	Leu	Leu	Arg	Phe	Ala	Lys	Lys	Ser
				85					90					95	
Ala	Ser	Ser	Lys	Ser	Arg	Arg	Phe	Leu	His	His	Asp	Met	Thr	Gln	Pro
			100					105					110		
Val	Pro	Ala	Asp	His	His	Glu	Gln	Phe	Ser	His	Ala	Thr	Ala	Ile	Leu
		115					120					125			
Ser	Leu	Gln	Asn	Met	Glu	Ser	Pro	Glu	Gln	Ala	Ile	Ala	His	Thr	Ala
	130					135						140			

Asn	Leu	Leu	Ala	Pro	Gln	Gly	Arg	Leu	Phe	Ile	Val	Leu	Asn	His	Pro
145					150					155					160
Cys	Phe	Arg	Ile	Pro	Arg	Leu	Ser	Ser	Trp	Leu	Tyr	Asp	Glu	Pro	Lys
				165					170						175
Lys	Leu	Leu	Ser	Arg	Lys	Ile	Asp	Arg	Tyr	Leu	Ser	Pro	Val	Ala	Val
			180					185					190		
Pro	Ile	Val	Val	His	Pro	Gly	Glu	Lys	His	Ser	Glu	Thr	Thr	Tyr	Ser
		195					200					205			
Phe	His	Phe	Pro	Leu	Ser	Tyr	Trp	Val	Gln	Ala	Leu	Ser	Asn	His	Asn
	210					215					220				
Leu	Leu	Ile	Asp	Ser	Met	Glu	Glu	Trp	Ile	Ser	Pro	Lys	Lys	Ser	Ser
225					230					235					240
Gly	Lys	Arg	Ala	Arg	Ala	Glu	Asn	Leu	Cys	Arg	Lys	Glu	Phe	Pro	Leu
				245					250					255	
Phe	Leu	Phe	Ile	Ser	Ala	Leu	Lys	Ile	Ser	Lys					
			260					265							

<210> 109

<211> 867

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 109

Met	Glu	Lys	Phe	Ser	Asp	Ala	Val	Ser	Glu	Ala	Leu	Glu	Lys	Ala	Phe
				5					10					15	
Glu	Leu	Ala	Lys	Asn	Ser	Lys	His	Ser	Tyr	Val	Thr	Glu	Asn	His	Leu
			20					25					30		
Leu	Lys	Ser	Leu	Leu	Gln	Asn	Pro	Gly	Ser	Leu	Phe	Cys	Leu	Val	Ile
		35					40					45			
Lys	Asp	Val	His	Gly	Asn	Leu	Gly	Leu	Leu	Thr	Ser	Ala	Val	Asp	Asp
	50					55					60				
Ala	Leu	Arg	Arg	Glu	Pro	Thr	Val	Val	Glu	Gly	Thr	Ala	Val	Ala	Ser
65					70				75						80
Pro	Ser	Pro	Ser	Leu	Gln	Gln	Leu	Leu	Leu	Asn	Ala	His	Gln	Glu	Ala
				85					90					95	
Arg	Ser	Met	Gly	Asp	Glu	Tyr	Leu	Ser	Gly	Asp	His	Leu	Leu	Leu	Ala
			100					105					110		
Phe	Trp	Arg	Ser	Thr	Lys	Glu	Pro	Phe	Ala	Ser	Trp	Arg	Lys	Thr	Val
	115					120						125			
Lys	Thr	Thr	Ser	Glu	Ala	Leu	Lys	Glu	Leu	Ile	Thr	Lys	Leu	Arg	Gln
	130					135					140				
Gly	Ser	Arg	Met	Asp	Ser	Pro	Ser	Ala	Glu	Glu	Asn	Leu	Lys	Gly	Leu
145				150					155						160
Glu	Lys	Tyr	Cys	Lys	Asn	Leu	Thr	Val	Leu	Ala	Arg	Glu	Gly	Lys	Leu
			165						170					175	
Asp	Pro	Val	Ile	Gly	Arg	Asp	Glu	Glu	Ile	Arg	Arg	Thr	Ile	Gln	Val
			180					185					190		
Leu	Ser	Arg	Arg	Thr	Lys	Asn	Asn	Pro	Met	Leu	Ile	Gly	Glu	Pro	Gly
		195				200						205			
Val	Gly	Lys	Thr	Ala	Ile	Ala	Glu	Gly	Leu	Ala	Leu	Arg	Ile	Val	Gln
	210					215					220				
Gly	Asp	Val	Pro	Glu	Ser	Leu	Lys	Glu	Lys	His	Leu	Tyr	Val	Leu	Asp
225					230					235					240
Met	Gly	Ala	Leu	Ile	Ala	Gly	Ala	Lys	Tyr	Arg	Gly	Glu	Phe	Glu	Glu
				245					250					255	

Arg	Leu	Lys	Ser	Val	Leu	Lys	Gly	Val	Glu	Ala	Ser	Glu	Gly	Glu	Cys
			260					265					270		
Ile	Leu	Phe	Ile	Asp	Glu	Val	His	Thr	Leu	Val	Gly	Ala	Gly	Ala	Thr
		275					280					285			
Asp	Gly	Ala	Met	Asp	Ala	Ala	Asn	Leu	Leu	Lys	Pro	Ala	Leu	Ala	Arg
	290					295					300				
Gly	Thr	Leu	His	Cys	Ile	Gly	Ala	Thr	Thr	Leu	Asn	Glu	Tyr	Gln	Lys
305					310					315					320
Tyr	Ile	Glu	Lys	Asp	Ala	Ala	Leu	Glu	Arg	Arg	Phe	Gln	Pro	Ile	Phe
				325					330					335	
Val	Thr	Glu	Pro	Ser	Leu	Glu	Asp	Ala	Val	Phe	Ile	Leu	Arg	Gly	Leu
			340					345					350		
Arg	Glu	Lys	Tyr	Glu	Ile	Phe	His	Gly	Val	Arg	Ile	Thr	Glu	Gly	Ala
		355					360					365			
Leu	Asn	Ala	Ala	Val	Val	Leu	Ser	Tyr	Arg	Tyr	Ile	Thr	Asp	Arg	Phe
	370					375					380				
Leu	Pro	Asp	Lys	Ala	Ile	Asp	Leu	Ile	Asp	Glu	Ala	Ala	Ser	Leu	Ile
385					390					395					400
Arg	Met	Gln	Ile	Gly	Ser	Leu	Pro	Leu	Pro	Ile	Asp	Glu	Lys	Glu	Arg
				405					410					415	
Glu	Leu	Ser	Ala	Leu	Ile	Val	Lys	Gln	Glu	Ala	Ile	Lys	Arg	Glu	Gln
			420					425					430		
Ala	Pro	Ala	Tyr	Gln	Glu	Glu	Ala	Glu	Asp	Met	Gln	Lys	Ala	Ile	Asp
		435					440					445			
Arg	Val	Lys	Glu	Glu	Leu	Ala	Ala	Leu	Arg	Leu	Arg	Trp	Asp	Glu	Glu
	450					455					460				
Lys	Gly	Leu	Ile	Thr	Gly	Leu	Lys	Glu	Lys	Lys	Asn	Ala	Leu	Glu	Asn
465					470					475					480
Leu	Lys	Phe	Ala	Glu	Glu	Glu	Ala	Glu	Arg	Thr	Ala	Asp	Tyr	Asn	Arg
				485					490					495	
Val	Ala	Glu	Leu	Arg	Tyr	Ser	Leu	Ile	Pro	Ser	Leu	Glu	Glu	Glu	Ile
			500					505					510		
His	Leu	Ala	Glu	Glu	Ala	Leu	Asn	Gln	Arg	Asp	Gly	Arg	Leu	Leu	Gln
		515					520					525			
Glu	Glu	Val	Asp	Glu	Arg	Leu	Ile	Ala	Gln	Val	Val	Ala	Asn	Trp	Thr
		530				535					540				
Gly	Ile	Pro	Val	Gln	Lys	Met	Leu	Glu	Gly	Glu	Ser	Glu	Lys	Leu	Leu
545					550					555					560
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<211> 1170

<212> DNA

<213> Chlamydia pneumoniae

<400> 110

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<212> DNA

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<210> 112

<211> 389

<212> PRT

<213> *Chlamydia pneumoniae*

<400> 112

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Ser Leu Leu Ile Asp Gly Thr Ile Trp Glu Gly Ala Ala Gly Asp Pro
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 Phe Tyr Gly Asp Tyr Val Phe Asp Arg Ile Leu Lys Val Asp Ala Pro
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 Lys Thr Phe Ser Met Gly Ala Lys Pro Thr Gly Ser Ala Ala Ala Asn
 85 90 95
 Tyr Thr Thr Ala Val Asp Arg Pro Asn Pro Ala Tyr Asn Lys His Leu
 100 105 110
 His Asp Ala Glu Trp Phe Thr Asn Ala Gly Phe Ile Ala Leu Asn Ile
 115 120 125
 Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Asn Gly Tyr
 130 135 140
 Ile Arg Gly Asn Ser Thr Ala Phe Asn Leu Val Gly Leu Phe Gly Val
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 260 265 270
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 Trp Ser Arg Ala Thr Phe Asp Ala Asp Asn Ile Arg Ile Ala Gln Pro
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 Lys Leu Pro Thr Ala Val Leu Asn Leu Thr Ala Trp Asn Pro Ser Leu
 305 310 315 320
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 Cys Gly Val Thr Val Gly Ala Thr Leu Val Asp Ala Asp Lys Trp Ser
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<211> 866

<212> PRT

<213> Chlamydia pneumoniae

<400> 113

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Pro	Ser	Pro	Gly	Leu	Gln	Thr	Leu	Leu	Arg	Asp	Ala	Lys	Gln	Glu	Ala	
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Lys	Thr	Leu	Gly	Asp	Glu	Tyr	Ile	Ser	Gly	Asp	His	Leu	Leu	Leu	Ala	
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<211> 1179

<212> DNA

<213> Homo sapiens

<400> 114

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<210> 116

<211> 487

<212> DNA

<213> Homo sapiens

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487

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 ggaaaaacct ttcactttct ttaggattca agttgctctc ctgctatcgt aactgtaaac 900
 attttggcgt ctgtggaggc tgttcatctc ctcaaattga atatgcatcc tctttaaaaa 960
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<210> 118
 <211> 287
 <212> DNA
 <213> Homo sapiens

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 gatatttttt catggcgcta aaagatacgg caaaaaaaat gactgacttg ttggaaagta 180
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<210> 119
 <211> 1002
 <212> DNA
 <213> Homo sapiens

<400> 119
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 cctaattacg gaggccatac ggtatcttct cgaggaggat ttcaagggat atgcgtacga 180
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 cctattgtct ctacaggaga taagaaatta gatagcgcaa ttattcaagc agatttgcgt 360
 gcgcagaata aacagacttt ggctacacat attcaaagta agctagggtc tatggaggga 420
 caatctcctc aagattataa agctgggtgc tatagtgcgc taagattgat gctgtttact 480
 ccaggcgaaa ctactgtgag tagcgagcgg gaacgtcaag cgtgcgttac gggtcgggat 540
 ctctgggaac aggctgcagg agatcttgct accaatggga atacagatgg gcttatgtta 600
 atggctaacc tatctgtggg aggggaagcat gtgcctgcgg ggcatttaag agaatacatg 660
 gatactgtaa agggtagctt tactgatgag aacgaggcta cagatcctac ggtagatgcc 720
 atttttagatt tagcagcaaa aatcgatgcg acggaattct ctagtccctg ttcaggggca 780

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gagttacaaa	aactgttaga	aaatgctcga	aaaacagatc	ctgagttata	tttccaaaca	960
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<210> 120
 <211> 1218
 <212> DNA
 <213> Homo sapiens

<400> 120

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ggagagctag	aagagcgcgt	ttcggatcat	gcagagtcta	tcattaccga	gagctcggaa	180
acgctgtttc	gtactacttc	ttcatcaggg	gtcagtgaag	atcttcagca	acacgttagc	240
ttggaggaat	ctccacgaca	acgaggtttc	cttggaacgga	tccgtgatgc	agtagcttct	300
atltggaagc	gtcgtgttgc	acgaaggaat	gaaaactatg	atgtgaaaaa	agcagaagag	360
cagcaaggga	ttgtgcaata	tctgcaggat	tcgaaaatgc	ctgctttaac	gctgcctat	420
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gatgctccgg	tgacaggtgc	ggggagaact	cttggtgatg	atgctgtaga	cgatattgaa	720
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gttcgttttag	aaaaagaaga	cccttcttca	gattattctc	aagctttatt	attagcaggg	900
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gttaatgcaa	acgtagaacg	attgcattcc	actttcgtct	atgagccaca	agcttatttg	1140
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<210> 121
 <211> 726
 <212> DNA
 <213> Homo sapiens

<400> 121

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<210> 122

<211> 330
 <212> PRT
 <213> Homo sapiens

<400> 122

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			20					25					30		
Leu	Val	Gln	Ser	Thr	Ser	Gly	Pro	Asn	Tyr	Gly	Gly	His	Thr	Val	Ser
			35					40				45			
Ser	Arg	Gly	Gly	Phe	Gln	Gly	Ile	Cys	Val	Arg	Ile	Ala	Asp	Leu	Phe
			50				55				60				
Arg	Asn	Cys	Phe	Ser	Arg	Asn	Arg	Gly	Thr	Thr	Thr	Thr	Pro	Ser	Arg
					70					75					80
Thr	Val	Ile	Thr	Gln	Ala	Asp	Ile	Tyr	His	Pro	Thr	Ile	Ser	Gly	Gln
				85					90					95	
Gly	Ala	Gln	Pro	Ile	Val	Ser	Thr	Gly	Asp	Lys	Lys	Leu	Asp	Ser	Ala
			100					105					110		
Ile	Ile	Gln	Ala	Asp	Leu	Arg	Ala	Gln	Asn	Lys	Gln	Thr	Leu	Ala	Thr
			115				120					125			
His	Ile	Gln	Ser	Lys	Leu	Gly	Ser	Met	Glu	Gly	Gln	Ser	Pro	Gln	Asp
			130				135				140				
Tyr	Lys	Ala	Gly	Ala	Tyr	Ser	Ala	Leu	Arg	Leu	Met	Leu	Phe	Thr	Pro
					150					155					160
Gly	Glu	Thr	Thr	Val	Ser	Ser	Glu	Arg	Glu	Arg	Gln	Ala	Cys	Val	Thr
				165					170					175	
Gly	Arg	Asp	Leu	Trp	Glu	Gln	Ala	Ala	Gly	Asp	Leu	Ala	Thr	Asn	Gly
			180					185					190		
Asn	Thr	Asp	Gly	Leu	Met	Leu	Met	Ala	Asn	Leu	Ser	Val	Gly	Gly	Lys
			195				200					205			
His	Val	Pro	Ala	Gly	His	Leu	Arg	Glu	Tyr	Met	Asp	Thr	Val	Lys	Gly
			210			215					220				
Thr	Phe	Thr	Asp	Glu	Asn	Glu	Ala	Thr	Asp	Pro	Thr	Val	Asp	Ala	Ile
					230					235					240
Leu	Asp	Leu	Ala	Ala	Lys	Ile	Asp	Ala	Thr	Glu	Phe	Ser	Ser	Pro	Gly
				245					250					255	
Ser	Gly	Gln	Val	Ile	Leu	Asn	Tyr	Ile	Gly	Asn	Tyr	Gly	Gln	Val	Val
			260					265					270		
Leu	Glu	Asn	Glu	Glu	Met	Asn	Leu	Val	Leu	Glu	Asp	Gln	Asn	Gly	
			275				280				285				
Gln	Asp	Pro	Gln	Arg	Val	Gln	Asp	Asn	Ser	Lys	Glu	Leu	Gln	Lys	Leu
			290				295				300				
Leu	Glu	Asn	Ala	Arg	Lys	Thr	Asp	Pro	Glu	Leu	Tyr	Phe	Gln	Thr	Leu
					310					315					320
Thr	Val	Ile	Thr	Ser	Ser	Val	Phe	Leu	Asp						
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<210> 123
 <211> 405
 <212> PRT
 <213> Homo sapiens

<400> 123

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			20					25					30		
Asp	Asp	Val	Pro	Asp	Ser	Glu	Glu	Gly	Glu	Leu	Glu	Glu	Arg	Val	Ser
		35					40					45			
Asp	His	Ala	Glu	Ser	Ile	Ile	Thr	Glu	Ser	Ser	Glu	Thr	Leu	Phe	Arg
	50					55					60				
Thr	Thr	Ser	Ser	Ser	Gly	Val	Ser	Glu	Asp	Leu	Gln	Gln	His	Val	Ser
	65				70					75					80
Leu	Glu	Glu	Ser	Pro	Arg	Gln	Arg	Gly	Phe	Leu	Gly	Arg	Ile	Arg	Asp
				85					90					95	
Ala	Val	Ala	Ser	Ile	Trp	Lys	Arg	Arg	Val	Ala	Arg	Arg	Asn	Glu	Asn
			100					105					110		
Tyr	Asp	Val	Lys	Lys	Ala	Glu	Glu	Gln	Gln	Gly	Ile	Val	Gln	Tyr	Leu
		115					120					125			
Gln	Asp	Ser	Lys	Met	Pro	Ala	Leu	Thr	Arg	Ala	Tyr	Arg	His	Leu	Arg
	130					135					140				
Ala	Phe	Asn	Ser	Ala	Cys	Leu	Arg	Thr	Ile	Arg	Glu	Phe	Phe	Ala	Thr
	145				150					155					160
Ile	Phe	Arg	Ala	Leu	Arg	Asp	Ala	Tyr	Tyr	Arg	His	Cys	Thr	Arg	Ser
				165					170					175	
Gly	Ile	Asn	Phe	Cys	Gly	Ala	Asp	Lys	Asp	Ser	Leu	Glu	Val	Leu	Val
		180						185					190		
Ala	Val	Gly	Leu	Leu	Leu	Arg	Met	Ala	Thr	Leu	Arg	Ser	Phe	Glu	His
		195					200					205			
Val	Gly	Gly	Asn	Tyr	Glu	Asp	Arg	Leu	Val	Asn	Asn	Asp	Ala	Pro	Val
	210					215					220				
Thr	Gly	Ala	Gly	Arg	Thr	Leu	Val	Asp	Asp	Ala	Val	Asp	Asp	Ile	Glu
	225				230					235					240
Ser	Ile	Leu	Asn	Thr	Arg	Thr	Asn	Trp	Pro	Gln	His	Val	Met	Ile	Gly
			245					250					255		
Phe	Ser	Arg	Gly	Leu	Val	Gln	Leu	Cys	Ala	Thr	Pro	Tyr	Asn	Ala	Thr
			260					265					270		
Ser	Gln	Glu	Cys	Phe	Lys	Ser	Ile	Val	Arg	Leu	Glu	Lys	Glu	Asp	Pro
		275					280					285			
Ser	Ser	Asp	Tyr	Ser	Gln	Ala	Leu	Leu	Leu	Ala	Gly	Ile	Ile	Asp	Arg
	290					295					300				
Leu	Ala	Glu	Lys	Ala	Pro	Met	Ala	Ala	Lys	Tyr	Val	Leu	Asp	Ala	Leu
	305				310					315					320
Arg	Val	Arg	Thr	Ser	Glu	Leu	Ile	Gly	Glu	Leu	Ile	Ile	Leu	Asp	Leu
				325					330					335	
Leu	Pro	Pro	Val	Trp	Lys	Val	Gly	Arg	Gly	Gly	Val	Phe	Pro	Pro	Val
			340					345					350		
Asn	Glu	Gln	Leu	Val	Val	Gln	Ile	Val	Asn	Ala	Asn	Val	Glu	Arg	Leu
		355					360					365			
His	Ser	Thr	Phe	Ala	His	Glu	Pro	Gln	Ala	Tyr	Leu	Arg	Met	Ile	Glu
	370					375					380				
Gly	Leu	Val	Thr	Asn	Phe	Phe	Leu	Pro	Ser	Glu	Glu	Asp	Pro	Ser	
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Ser	Val	Gly	Asn	Ile											
				405											

<210> 124

<211> 238

<212> PRT

<213> Homo sapiens

<400> 124

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      20      25      30
Ile Asp Ile Leu Lys Gln Cys Pro Thr Val Arg Phe Asp Gln Thr Val
      35      40      45
Asp Val Ser Val Lys Leu Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln
      50      55      60
Ile Arg Gly Ser Val Ser Leu Pro His Gly Thr Gly Lys Val Leu Arg
      65      70      75      80
Ile Leu Val Phe Ala Ala Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala
      85      90      95
Gly Ala Asp Phe Val Gly Ser Asp Asp Leu Val Glu Lys Ile Lys Gly
      100      105      110
Gly Trp Val Asp Phe Asp Val Ala Val Ala Thr Pro Asp Met Met Arg
      115      120      125
Glu Val Gly Lys Leu Gly Lys Val Leu Gly Pro Arg Asn Leu Met Pro
      130      135      140
Thr Pro Lys Ala Gly Thr Val Thr Thr Asp Val Val Lys Thr Ile Ala
      145      150      155      160
Glu Leu Arg Lys Gly Lys Ile Glu Phe Lys Ala Asp Arg Ala Gly Val
      165      170      175
Cys Asn Val Gly Val Ala Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys
      180      185      190
Glu Asn Val Glu Ala Leu Cys Ala Ala Leu Val Lys Ala Lys Pro Ala
      195      200      205
Thr Ala Lys Gly Gln Tyr Leu Val Asn Phe Thr Ile Ser Ser Thr Met
      210      215      220
Gly Pro Gly Val Thr Val Asp Thr Arg Glu Leu Ile Ala Leu
      225      230      235

```

<210> 125

<211> 713

<212> DNA

<213> Chlamydia trachomatis

<400> 125

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cacttgggaa atctcaaaaca acagggcaaaa tagcgggagg agcgatctac tcccctactg 180
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cagggacagc cattacccta tctggagtct ctcgattttc aggggaatacg gctgatttag 360
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atagcattac agaaaaaatt acttttagaaa acggttcttt tatttttgaa agaaaccaag 480
ctaataaacg tggagcgatt tactctccta gcgtttccat taaagggaat aatattacct 540
tcaatcaaaa tacatccact catgatggaa gcgctatcta ctttacaata gatgctacga 600
ttgagtcttt aggatctgtt ctttttacag gaaataacgt tacagctaca caagctagtt 660
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```

<210> 126

<211> 780

<212> DNA

<213> Chlamydia trachomatis

<400> 126

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ttaactaaca agcatactca ttctggattt cattgcctcc taaaattctt agtcaaatecc 120
gaaagaagcc gacactcgag cgctcttctc ctaaaaatct tgttttttct ctgcttccga 180
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ttgtcccgac tgccagaata attggaaaga agtcacccac acggatcaac tccctgaaaa 360
catcattcat gctgatgatg cttgttatca ctctggttat gtacaggctc tcattgatat 420
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tcttcctaca gatgatgta cgcgcaacgc cattatcaac ctaattaaag accttccatt 540
cattcactcc gtagaaatct gccaaagcat ctatcaaacc tgtcatcatc aaggccctca 600
tggaagact tctcttccag aacaacggtt tttctgtaca aaggctctgtg gaaaagaagc 660
tatttggtta ccacagaata ccatacctatt ctgcctctt gtagcagata ctatccaagc 720
aactaatagt gcaggatatcc gttttaacga cgaagtcgta ggaaaacgtg ttggctctgc 780

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<210> 127

<211> 433

<212> DNA

<213> Chlamydia trachomatis

<400> 127

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ctttaaagat tcgtcgtcct tttggtacta cgagagaagt tcgtgtgaaa tggcgttatg 60
ttcctgaagg tgtaggagat ttggctacca tagtccttc tatcagggtc ccacagttac 120
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ctgttatatg ggagtcggag ggtcttttcc gcgcttatat ttcttcgggtg actgatgggg 360
atggtaagag ccataaagta ggattttctaa gaattcctac atatagttgg caggacatgg 420
aagattttga tcc 433

```

<210> 128

<211> 803

<212> DNA

<213> Chlamydia trachomatis

<400> 128

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aaaagagttt taaaatggga aattctgggt tttatttgta taacactgaa aactgcgtct 120
ttgctgataa tatcaaagtt gggcaaatga cagagccgct caaggaccag caaataatcc 180
ttgggacaac atcaacacct gtcgcagcca aaatgacagc ttctgatgga atatctttaa 240
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ctcccagtaa cattgaaact ttattaggag gaactgaaat aggaaaattc acagtcacac 540
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gatactcatc aggcattcct aatttatgta gtctaagaac cagtattact aatacaggat 720
tgactccgac aacgtattca ttacgtgtag gcggtttaga aagcgggtgtg gtatgggtta 780
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```

<210> 129

<211> 842

<212> DNA

<213> Chlamydia trachomatis

<400> 129

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tgccacaatg cgcacaaacg tacctaacat ttatgctatt ggagatatca caggaaaatg 180
gcaacttgcc catgtagctt ctcacaaagg aatcattgca gcacggaata tagctggcca 240
taaagaggaa atcgattact ctgccgtccc ttctgtgatc tttaccttcc ctgaagtcgc 300
ttcagtaggc ctctcccaa cagcagctca acaacaaaaa atccccgtca aagtaacaaa 360
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ttacgaaact atccacgcac atccaacctt agcagaagtt tgggctgaaa gtgcgttggt 600
agctgctgat accccattac atatgcccc tgctaaaaaa tgaccgattc agaatctcct 660
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gggctgggtat ttgctcaaac tgataatact atcaaaaata aagggtctcc tacagtctgt 780
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gc 842

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<210> 130

<211> 813

<212> DNA

<213> Chlamydia trachomatis

<400> 130

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aatccaccct taatcttttc aaagataaga tcttctgtag aatataaagc cgctccagac 120
aaagaagctt tcacgtcagt taatgtgatt ccagccttac tactatcccc aacaaaagca 180
atacctaaaa aagattctcc gtcacgagga gaatcaaggt tgctgctcgt aaaactacaa 240
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gttactgaga acaaagtact ttgctctacc ttaccgggaa gagtatccgc atctttctct 360
tggaagaac ttggatctcc tacaattaac ctatactgtc cttcagcctg actatcttta 420
gacccaacga atagatctcg aatttggctc aacaataaaa ccgcttgagg gcctacatat 480
accagctcat ttacagactg tcctccagca tgaagatcta cgcaactagc taaccgcta 540
acagaggcaa ggatagctgc tactacagac aaagaaaact tagaacaggt gctttttata 600
tctttctcgg aactcatttc aaacctgcca aatagcactt ttttgacaaa ctagcgtacc 660
gaaacaatcg gtccaacaac gcgttctgcc tatgatttca caaagacaaa acgaccata 720
gacaagctcc agagacgaca ttagagcttt agaccgtgga atgtacaatg ctgactgctt 780
tttgagaaaag atttttttata aagaacaggc cct 813

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<210> 131

<211> 1947

<212> DNA

<213> Chlamydia trachomatis

<400> 131

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gagttgttta tctgcccata atcgatgata tcttctgaag tctttaatac cttcttacat 180
aagatccatc tctccggaga acagtgtcct tctatggata aaattcctac gcagatattc 240
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aacaaaaaaa agccgcccag gaatccctgg acggcaccta cacatcgata aaatcaaaga 660
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```

<210> 132

<211> 1278

<212> DNA

<213> *Chlamydia trachomatis*

<400> 132

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aagaatcgct tccccacgag catctccage tgatactgct ttcaatgtta cagaaaactc 180
tacagtttct ttagaaccta atctaggtaa cgaatcgaat actactgtat tgcctgtaat 240
cgttccttta gttggtccag agaaggatac aggttgtagt tcttttagaga atttaagcat 300
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ctgtagagac tctccaggat tcagttcttt cacagtccaa actactttat tacaagaaat 600
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<210> 133

<211> 916

<212> DNA

<213> Chlamydia trachomatis

<400> 133

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tttcgagttt gatgttctcg aaaaatgttt cttgcggaga aaagggaatg atctcaggga 180
aaaccgtgag tatttccgga gcaggcgaag tgattttttg ggataactct gtgggggtatt 240
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ggaatttttg aacagttttt cgaggtaata gtaataataa tgctggtagt gggggtagtg 480
ggtctgctac aacaccaagt tttacagtta aaaactgtaa aggggaaagt tctttcacag 540
ataacgtagc ctctgtgga ggcggagtag tctacaaagg aactgtgctt ttcaaagaca 600
atgaaggagg catattcttc cgagggaaca cagcatacga tgatttaggg attcttgctg 660
ctactagtcg ggatcagaat acggagacag gaggcggtgg aggagttatt tgctctccag 720
atgattctgt aaagtttgaa ggcaataaag gttctattgt ttttgattac aactttgcaa 780
aaggcagagg cggaagcatc ctaacgaaag aattctctct tgtagcagat gattcggttg 840
tctttagtaa caatacagca gaaaaaggcg gtggagctat ttatgctcct acgtatcgat 900
ataagcacga atggag 916
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<210> 134

<211> 751

<212> DNA

<213> Chlamydia trachomatis

<220>

<221> misc_feature

<222> (1) ... (751)

<223> n = A,T,C or G

<400> 134

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ctgagcaggc acctcacttt ctttcttctc gatactctct ttaacaatag gattcccaag 120
gttttgatct gaggataagt tttgaaatcc agcaaacagt ctgttatcat aaaagactgg 180
ctcctgaata cttgggactg tatccctttc taactctaac tccaaacctt cacgcttgat 240
aacaatgcgc ttcacgtgcc gaattcggca cgaggctctt tcttacgagg atctcgagtc 300
aagaagcctt gagccttcaa ttcttgcttc atgtcttctt tctcttgag aacagctcta 360
gctaaaccca atcgagtagc aataacctga ccttgaaccc ctctccact tactcggata 420
atcaaactga aactgttgac atcaccgagc attctgagcg gagctaagat ggttgctctt 480
tgaacttcaa gagggaaata ttgctctaaa gtctttccat ttacgtcaat ttttccattc 540
ccagaacgaa gacgaacgca cacctgcttt cttctgcttg ttgcaacaga ctcttgatc 600
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ttttgtttta ggcaacattc nttaacagca t 751
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<210> 135

<211> 410

<212> DNA

<213> Chlamydia trachomatis

<400> 135

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ataatccaga ctcttcctca tctggagata gcgctggaga ctctgaagaa ctgactgaga 60
cagaagctgg ttctacaaca gaaactccta ctttaatatg aggaggtgct atctatggag 120
aaactgttaa gattgagaac ttctctggcc aaggaatatt ttctggaaac aaagctatcg 180
ataacaccac agaaggctcc tcttccaaat ctgacgtcct cggaggtgcg gtctatgcta 240
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aaacattggt	taatctcgat	agcgggagct	ctagacgaac	tgtcaccttc	tccgggaata	300
ctgtctcttc	tcaatctaca	acaggtcagg	ttgctggagg	agctatctac	tctcctactg	360
taaccattgc	tactcctgta	gtatttttcta	aaaactctgc	aacaaacaat		410

<210> 136

<211> 2719

<212> DNA

<213> *Chlamydia trachomatis*

<400> 136

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cgggtgcatt	cataaacagc	ttcctcgtaa	tggtgtagat	tggtcggggg	atattcaact	180
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aagcacggga	caaatcaacc	atgttatgat	gaaaatctcg	gagcatgaat	tcattcatgc	360
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gaatctattc	tgctcattag	gtgaaccgcc	tatagaagct	gtttttggcg	ttcctaaaaa	480
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<210> 137
 <211> 2354
 <212> DNA
 <213> Chlamydia trachomatis

<400> 137

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<210> 138
 <211> 898
 <212> DNA
 <213> Chlamydia trachomatis

<400> 138

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ccggaacagc taaaggattt acagctttcc aatggatat caagatagag ggaatcactc 120

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<210> 139

<211> 660

<212> PRT

<213> Chlamydia trachomatis

<400> 139

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                20                      25                      30
Asn Ser Glu Thr Lys Glu Ser Thr Lys Ala Ser Glu Ala Ser Pro Ser
                35                      40                      45
Ala Ser Ser Ser Val Ser Ser Trp Ser Phe Leu Ser Ser Ala Lys Asn
                50                      55                      60
Ala Leu Ile Ser Leu Arg Asp Ala Ile Leu Asn Lys Asn Ser Ser Pro
                65                      70                      75                      80
Thr Asp Ser Leu Ser Gln Leu Glu Ala Ser Thr Ser Thr Ser Thr Val
                85                      90                      95
Thr Arg Val Ala Ala Lys Asp Tyr Asp Glu Ala Lys Ser Asn Phe Asp
                100                     105                     110
Thr Ala Lys Ser Gly Leu Glu Asn Ala Lys Thr Leu Ala Glu Tyr Glu
                115                     120                     125
Thr Lys Met Ala Asp Leu Met Ala Ala Leu Gln Asp Met Glu Arg Leu
                130                     135                     140
Ala Asn Ser Asp Pro Ser Asn Asn His Thr Glu Val Asn Asn Ile
                145                     150                     155                     160
Lys Lys Ala Leu Glu Ala Gln Lys Asp Thr Ile Asp Lys Leu Asn Lys
                165                     170                     175
Leu Val Thr Leu Gln Asn Gln Asn Lys Ser Leu Thr Glu Val Leu Lys
                180                     185                     190
Thr Thr Asp Ser Ala Asp Gln Ile Pro Ala Ile Asn Ser Gln Leu Glu
                195                     200                     205
Ile Asn Lys Asn Ser Ala Asp Gln Ile Ile Lys Asp Leu Glu Arg Gln
                210                     215                     220
Asn Ile Ser Tyr Glu Ala Val Leu Thr Asn Ala Gly Glu Val Ile Lys
                225                     230                     235                     240
Ala Ser Ser Glu Ala Gly Ile Lys Leu Gly Gln Ala Leu Gln Ser Ile
                245                     250                     255
Val Asp Ala Gly Asp Gln Ser Gln Ala Ala Val Leu Gln Ala Gln Gln
                260                     265                     270
Asn Asn Ser Pro Asp Asn Ile Ala Ala Thr Lys Glu Leu Ile Asp Ala
                275                     280                     285

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Ala Glu Thr Lys Val Asn Glu Leu Lys Gln Glu His Thr Gly Leu Thr
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 Asp Ser Pro Leu Val Lys Lys Ala Glu Glu Gln Ile Ser Gln Ala Gln
 305 310 315 320
 Lys Asp Ile Gln Glu Ile Lys Pro Ser Gly Ser Asp Ile Pro Ile Val
 325 330 335
 Gly Pro Ser Gly Ser Ala Ala Ser Ala Gly Ser Ala Ala Gly Ala Leu
 340 345 350
 Lys Ser Ser Asn Asn Ser Gly Arg Ile Ser Leu Leu Leu Asp Asp Val
 355 360 365
 Asp Asn Glu Met Ala Ala Ile Ala Leu Gln Gly Phe Arg Ser Met Ile
 370 375 380
 Glu Gln Phe Asn Val Asn Asn Pro Ala Thr Ala Lys Glu Leu Gln Ala
 385 390 395 400
 Met Glu Ala Gln Leu Thr Ala Met Ser Asp Gln Leu Val Gly Ala Asp
 405 410 415
 Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys Asp Ala Leu Ala Gln
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 Ala Leu Lys Gln Pro Ser Ala Asp Gly Leu Ala Thr Ala Met Gly Gln
 435 440 445
 Val Ala Phe Ala Ala Ala Lys Val Gly Gly Gly Ser Ala Gly Thr Ala
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 Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr Lys Thr Ala Phe Ser
 465 470 475 480
 Ser Thr Ser Ser Ser Tyr Ala Ala Ala Leu Ser Asp Gly Tyr Ser
 485 490 495
 Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu Ser Arg Ser Gly Val
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 Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln Thr Leu Gly Asp Val
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 Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met Ser Thr Ile Val Ser
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 Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala Val Gln Asn Ser Ala
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 Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu Arg Glu Phe Val Asp
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 Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn Ala Phe Arg Lys Gln
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Leu	Tyr	Ser	Ser	Arg	Ser	Asn	Glu	Asn	Arg	Glu	Ser	Pro	Tyr	Ala	Val		
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Thr	Arg	Ala	Ser	Arg	Gly	Val	Leu	Ser	Arg	Phe	Gln	Arg	Gly	Leu	Val		
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Arg	Ile	Ala	Asp	Lys	Val	Arg	Arg	Ala	Val	Gln	Cys	Ala	Trp	Ser	Ser		
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Val	Ser	Thr	Ser	Arg	Ser	Ser	Ala	Thr	Arg	Ala	Ala	Glu	Ser	Gly	Ser		
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Ala	Ala	Arg	Glu	Ile	Ala	Lys	Arg	Trp	Glu	Lys	Arg	Val	Arg	Asp	Leu		
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[illegible]